DOCUMENT RESUME

ED 037 591 AA 000 524

AUTHOR	Hawkridge, David G.; And Others
TITLE	Foundations for Success in Educating Disadvantaged Children. Final Report.
INSTITUTION	American Inst. for Research in Behavioral Sciences, Palo Alto, Calif.
SPONS AGENCY	National Advisory Council on the Education of Disadvantaged Children, Washington, D.C.
REPORT NO	AIR-805-12-68-FR
PUB DATE	Dec 68
CONTRACT	OEC-0-9-107143-1370(099)
NOTE	112p.
EDRS PRICE	EDRS Price MF-$0.50 HC-$5.70
DESCRIPTORS	*Academic Achievement, *Achievement Gains, *Cognitive Ability, Cognitive Measurement, *Compensatory Education Programs, *Disadvantaged Youth

ABSTRACT

The aim of this study was to identify those characteristics of compensatory education programs most likely to be associated with success and failure respectively in producing measured benefits of cognitive achievement. Eighteen well-designed, successful programs were compared with 25 matching, unsuccessful programs. The first group was selected in an earlier study, OEC-0-8-089013-3515(010), from over 1000 surveyed. Unsuccessful programs were selected in this study from the same sample. Tallies of 91 program components were prepared. Each successful program was then compared with one or two matching unsuccessful programs. The component composition of these programs was analyzed both qualitatively and quantitatively. Resulting recommendations for establishing sound programs were, for Preschool programs: a) careful planning, including statement of objectives; b) teacher training in the methods of the programs; c) instruction and materials closely relevant to the objectives; Elementary programs: a) academic objectives clearly stated; b) active parental involvement, particularly as motivators; c) individual attention for pupils' learning problems; d) high intensity of treatment; Secondary programs: a) academic objectives clearly stated; b) individualization of instruction; c) directly relevant instruction. (ON)

OE/BESE TITLE I
Project 107143

AA 000 524

AIR-805-12/68-FR

Reprinted 7/69

FINAL REPORT

Project No. 107143

Contract No. OEC-0-9-107143-1370 (099)

FOUNDATIONS FOR SUCCESS IN EDUCATING DISADVANTAGED CHILDREN

December 1968

AMERICAN INSTITUTES FOR RESEARCH/PALO ALTO

ED 037 591

AIR-805-12/68-FR

FINAL REPORT

Project No. 107143

Contract No. OEC-0-9-107143-1370 (099)

FOUNDATIONS FOR SUCCESS IN EDUCATING DISADVANTAGED CHILDREN

David G. Hawkridge
G. Kasten Tallmadge
Judith K. Larsen

with the assistance of
Debbra D. Michaels

American Institutes for Research
in the Behavioral Sciences

Palo Alto, California

December 1968

The research reported herein was performed pursuant to a contract with the Office of Education, U.S. Department of Health, Education, and Welfare. Contractors undertaking such projects under Government sponsorship are encouraged to express freely their professional judgement in the conduct of the project. Points of view or opinions stated do not, therefore, necessarily represent official Office of Education position or policy.

U.S. National Advisory Council on the Education of
Disadvantaged Children

TABLE OF CONTENTS

Page

LIST OF TABLES ii

SUMMARY 1

INTRODUCTION 2
    Background 2
    Limits of this Study 3

METHODS AND PROCEDURES 5
    Selection of Programs for Study 5
    Data Collection 9
    Methods of Presenting Data 11

RESULTS AND CONCLUSIONS 13
    The Context 13
    Results 15
    Recommendations 19

APPENDIX A-1
    Technical Comparisons of Matched Programs A-1

ERIC REPORT RESUME A-89

LIST OF TABLES

Table

Page

1 The Successful and Unsuccessful Programs Selected for Comparison 7

2 The Components Identified in the Programs Selected for Study 9

3 Summary of Component Analysis 16

SUMMARY

The aim of this study was to identify those characteristics of compensatory education programs most likely to be associated with success and failure respectively in producing measured benefits of cognitive achievement.

Eighteen well-designed, successful programs were compared with 25 matching, unsuccessful programs. The first group was selected in an earlier study, OEC-0-8-089013-3515 (010), from over 1000 surveyed. Unsuccessful programs were selected in this study from the same sample.

Tallies of 91 program components were prepared. Each successful program was then compared with one or two matching unsuccessful programs. The component composition of these programs was analyzed both qualitatively and quantitatively.

Resulting recommendations for establishing sound programs were, for Preschool programs:

a) careful planning, including statement of objectives;
b) teacher training in the methods of the programs;
c) instruction and materials closely relevant to the objectives;

Elementary programs:

a) academic objectives clearly stated;
b) active parental involvement, particularly as motivators;
c) individual attention for pupils' learning problems;
d) high intensity of treatment;

Secondary programs:

a) academic objectives clearly stated;
b) individualization of instruction;
c) directly relevant instruction.

INTRODUCTION

Background

Early in 1968 the American Institutes for Research in the Behavioral Sciences contracted with the U.S. Office of Education, Office of Program Planning and Evaluation, to study educational programs for disadvantaged children. In a six-month project involving over 1,000 such programs (of which 98 were site visited), A.I.R. located 21 which could be said to be successful in the sense that each had significantly improved the cognitive achievement in language or number, of its pupils. These 21 programs were described and analyzed in A.I.R.'s recent report, A Study of Selected Exemplary Programs for the Education of Disadvantaged Children. About one-third of the programs described were for preschool children, one-half for elementary schools, and the remainder at the secondary level. While other successful programs no doubt exist in parts of the country not visited during the A.I.R. project, the selection described is quite representative.

The A.I.R. report was made available to the National Advisory Council on the Education of Disadvantaged Children for its meeting in October, since the report's findings were likely to assist the council to meet the request contained in the Kennedy Amendment from Congress, charging the Council to identify programs which were succeeding.

The Kennedy Amendment also charged the Council with the task of investigating the factors which were usually associated with success in compensatory education. A.I.R. suggested to the Council that the data collected during the earlier six-month project for the Office of Education could be subjected to further analysis in a short study aimed at uncovering those factors associated with success. The exact proposal was to analyze both components of selected well-designed "successful" programs and those of well-designed "unsuccessful" programs to identify those components most frequently associated with each.

The National Advisory Council agreed to contract with A.I.R. for this study, of which this is the Final Report. The results of the analysis are contained in pages 15 to 19, under Results and Conclusions, and the lay reader is directed there after noting the limits of the study.

Limits of this Study

Since this study was based on the earlier A.I.R. project, it was limited to the programs studied during that project. Data were available on over 400 programs, but not all of these were well-designed. Besides the 21 successful programs in the earlier study, about 100 programs were thought to be suitable for this study, but only 25 of the 100 could be proved to be unsuccessful. The remainder either did not have enough data from testings or else had not analyzed the data sufficiently for a clear verdict to be given. In summary, a large pool of programs yielded few suitable for comparison, but, as it turned out, enough for the purposes of the study.

The reasons why many programs were rejected are all connected with the fairly rigorous limitations of both the earlier study and this one. Only programs which had measured benefits in language or number were described in the A.I.R. report. Measurement implied using properly standardized tests as a criterion, not teachers' grades. "Benefits" meant that improvement of scores was not enough; the scores had to improve more than they would have improved under the conventional school program. "Language" meant achievement in areas such as reading, verbal fluency, and vocabulary. "Number" usually implied arithmetic, sometimes mathematics.

In this study these same limitations applied, except that the search was for programs which had failed to teach children to read better, spell more accurately, subtract correctly, and so on.

If the programs had succeeded in improving pupil attitudes, but had failed in the cognitive area, they were considered suitable for comparison with the programs which had succeeded in the cognitive areas. Thus the term "unsuccessful" in this report is applied to programs which have been unsuccessful in producing cognitive gains although they may have been successful in meeting other objectives.

The study was concerned with results of programs rather than their aims. Once results were established, then it was necessary to look at the process or treatment which had produced the results.

One other limit on the study should be mentioned. Because of the project's very short duration, it was not possible to conduct detailed verification of the data previously collected, most of it in reports. The study's conclusions, however, are not thought to be weakened appreciably by this fact.

METHODS AND PROCEDURES

Selection of Programs for Study

Before unsuccessful programs could be selected for study, an analysis of the 21 successful programs in the A.I.R. report to the Office of Education was undertaken.

As a first step, two programs were eliminated because it was known that no matching programs could be found for them. The first, the Teacher Expectation Project in South San Francisco (the Rosenthal Study), was the only one of its kind in the country, and also lacked any components as such. In it, teachers were led to believe that certain pupils would improve and others not, whereas in fact the two groups were randomly selected. Those the teachers expected to improve did so. The second program eliminated was the Infant Education Project in Washington, D.C., in which children aged 15-36 months were tutored. No other program known to A.I.R. involved children so young.

From the remaining 19 programs, a list of components was compiled by the simple process of noting every component which had been used. (At the same time, a table was drawn up to show which components were used in which programs.) The list of components was added to later when other components were found in analyzing unsuccessful programs. Later, the list was checked by a second perusal of the successful programs in case any components had been missed.

At this stage an attempt was made to match unsuccessful programs with the successful ones, using two main criteria. The first was whether the program objectives were similar. It was not necessary that the objectives be identical in content, or in level of specificity; as long as the programs being matched had aimed in the same direction, say, towards improving reading, a comparison could be drawn. The second criterion was age of the pupils. Clearly a secondary school program could not be compared with a preschool program, although it might be quite reasonable to match a program for first-graders with one for third-graders.

Besides objectives and age, other criteria were taken into account where possible. These were: ethnic composition of the program students, types of learning evaluated, and number of pupils served (size of the program). It proved impossible to match the programs on all of these criteria. The pool of unsuccessful programs was not large enough. Instead, it was a matter of securing the best possible "fit". Where it could be done, two unsuccessful programs were selected to compare with each successful program.

The preschool programs were the most difficult to match. This was because few preschool programs employ standardized tests to measure progress; many of the published tests do not have a wide enough range to include such young children. Besides the Infant Education Project, eliminated earlier, one other preschool program could not be matched. This, the Early Childhood Project in New York, is a long-term, massive operation, and the only programs like it in the country were either ones that had not been included in the A.I.R. survey (e.g., Learning to Learn, in Jacksonville, Florida), or ones for which no proven success or failure was yet evident (e.g., The Cooperative Project, in Tucson, Arizona). No suitable comparison program could be found.

For nine of the remaining 18 programs only a single matching unsuccessful program could be found. Table 1 shows the final selection of programs for comparison. For matching purposes, two of the unsuccessful programs (the Language Arts Project, and the Johnson-Western Project) were used twice.

The titles used for the programs are in some cases contractions of the ones reported in the literature, and in a few instances they were invented for this study to replace a long academic title to the relevant report. An example of the latter is the Johnson-Western Project, which was funded by two foundations of those names.

Table 1. (Cont.)

THE SUCCESSFUL AND UNSUCCESSFUL PROGRAMS SELECTED FOR COMPARISON

Successful	Unsuccessful
Elementary Reading Centers, Milwaukee, Wis.	Remedial Teacher Project, Milwaukee, Wis.
School and Home, Flint, Mich.	Linguistic Approach to Reading, Madison, Wis.
Programmed Tutorial Reading, Indianapolis, Ind.	Programmed Instruction Project, Chapel Hill, N.C. Language Arts Project, Washington, D.C.
Speech and Language Development Program, Milwaukee, Wis.	Auditory and Perceptual Skills Training Program, New York City. Language Arts Project, Washington, D.C.
Communication Skills Center Project, Detroit, Mich.	Special Instructional Programs, Oakland, Calif. Individualized Reading Project, Collbran, Colo.
Junior High Summer Institutes, New York City.	Junior High School Summer Program, Oakland, Calif.
Project R-3, San Jose, Calif.	Small-Group Basic Education (Secondary), Albion, Pa.
College Bound Summer School, New York City.	College Discovery and Development, New York City. Higher Horizons (Junior High), New York City.

Table 1.

THE SUCCESSFUL AND UNSUCCESSFUL PROGRAMS SELECTED FOR COMPARISON

Successful	Unsuccessful
Preschool Program, Fresno, Calif.	Experience Record Project, Detroit, Mich.
Perry Preschool, Ypsilanti, Mich.	Group Experience Project, Fremont, Calif.
Diagnostically-Based Curriculum, Bloomington, Ind.	Johnson-Western Project, Racine, Wis.
Academic Preschool, Champaign, Ill.	Johnson-Western Project, Racine, Wis. Academic Head Start Preschool, Harrisburg, Pa.
Homework Helper Program, New York City.	Project Motivation, Minneapolis, Minn.
Intensive Reading Instructional Teams, Hartford, Conn.	Craft Project, New York City. Remedial Reading, Philadelphia, Pa.
After School Study Centers, New York City.	All Day Neighborhood Schools, New York City. Lincoln Plus, Manual Plus, Kansas City, Mo.
Self-Directive Dramatization, Joliet, Ill.	Improving Oral and Written Expression, Racine, Wis.
More Effective Schools, New York City.	Operation Moving Ahead, Prince George's County, Md. Grade Reorganization Project, New York City.
Project Concern, Hartford, Conn.	Integration Model Project, Oakland, Calif. Free Choice Open Enrollment Program, New York City.

Data Collection

As already mentioned, a table was drawn up to show which components were used in each of the successful programs. A similar table was compiled for the unsuccessful programs. From the two tables, simple charts were made up for each comparison, showing which components were present in the two or three programs being compared. Special notes about the components were also entered on these charts where appropriate.

Table 2 shows the components identified and entered on the charts, arranged under the headings used later in the technical comparisons.

Table 2.

THE COMPONENTS IDENTIFIED IN THE PROGRAMS SELECTED FOR STUDY

Personnel	Qualified administrator, qualified teacher, qualified skill specialist, qualified community worker, unqualified community worker, qualified counselor, adult classroom aide, high school student aide, qualified reading specialist, peer tutor, speech therapist, medical-dental-nursing personnel, psychologist, social worker, pupil-teacher ratio 1:1, pupil-teacher ratio 1:2-5, pupil-teacher ratio 1:6-10, pupil-teacher ratio 1:11-15, pupil-teacher ratio 1:16+, librarian, parental involvement, community volunteers, audio-visual specialist.
Methods	Help with homework, remedial reading, remedial arithmetic, remedial science, language (verbal skills) teaching, motor skills teaching, concept formation teaching, creativity teaching, content-oriented approaches, tightly controlled teaching, programmed instruction (conventional), individual tutoring, home tutoring, competitive incentive schemes, tutoring by parents, homogeneous grouping, ungraded classes, grouping within heterogeneous class, field trips, dramatization, integration (bussing), remedial social studies, art and music, sensory perception training, social competency training, home visits by social worker, college preparatory courses.

Table 2. (Cont.)

THE COMPONENTS IDENTIFIED IN THE PROGRAMS SELECTED FOR STUDY

Services	Snack, breakfast, lunch, extended school day, library, camp, counseling sessions, team teaching, in-service training for teachers, in-service training for aides, regular staff progress meetings, group meetings of parents, health services, supportive teams, special information for teachers, ancillary excursions for parents, duration of 6 weeks or less, duration of 6 weeks to 4 months, duration of 4 to 9 months (one to two semesters), duration of one year, parent-teacher conferences, program continued two consecutive years, program continued three consecutive years, program continued four or more consecutive years, financial aid or stipend to students, cultural program.
Equipment	Games and toys, listening posts, Language Masters and SRA Reading Labs, personal dictionaries, individual files, books or materials that can be taken home, foreign language books, audio-visual aids in general, closed circuit TV, art materials, telephones, cameras (for students' pictures), special kits, brochures for parents, typewriters, teaching machines.

The two senior authors were responsible for preparing the technical comparisons (which are contained in the Appendix to this report). They used the original documents for each program, partly to check the component analysis and partly to add further information, since a mechanical approach based solely on the entries in the tables and charts did not seem wise. There were too many items of "soft" data connected with each program for complete reliance to be placed on the component analysis.

Most of the original documents were available at A.I.R., but visits to the ERIC Center at Stanford University, and telephone inquiries to other places, supplied additional data.

The data were collected under selected headings: the objectives of the programs, the students they served, the assessment of cognitive achievement benefits, and the programs' components. These headings are reflected in the technical comparisons.

Methods of Presenting Data

In preparing the technical comparisons, a specific format was followed. That format should be explained briefly here.

Under the heading "objectives", the authors set out briefly what the experimenters in each program wished their students to achieve. The actual process, treatment or method was not so important. If one program used dramatization to help children to read, and another used teaching machines for the same purpose, to help children to read, the methods were dealt with elsewhere, but the goal was specified under this heading.

When writing about the students served, the authors wished to give as comprehensive a picture as possible of the numbers involved, their grade levels, socioeconomic status, ethnic composition, and of any special criteria used for selecting the pupils for the particular program being discussed. Many programs operated over more than one year, helping successive groups of pupils. To take this into account the group to which the evaluation referred was specified. The evaluation which showed the program's success or failure was often of only one particular year's operations, perhaps unfortunately.

In assessing the cognitive achievement benefits of the programs, the authors concerned themselves almost exclusively with results obtained through the use of standardized tests. Ratings, classroom grades, and even special tests prepared by teachers were considered to be too unreliable and too subject to bias on the part of the teacher or evaluator who prepared them. It was also necessary to assess achieved gains against some standard. It was not felt that a program could be considered successful simply because students scored higher on a test after the program than they did before. The achieved gain had to exceed that made by a control group over a comparable time period or that expected on the basis of normative data. Descriptions of benefits achieved were always stated with specific reference to the tests used and ambiguous or non-significant ($p > .05$) results were not discussed.

The authors divided the analysis of program components into five sections. Under "general", they discussed any broad differences between the objectives of the programs, the populations served, or the tests employed, and included any other points relative to the treatment which were not clearly evident from the subsequent discussion of four classes of program components. These four classes were personnel, methods, services, and equipment. Under each, the results of the component analyses were discussed in terms of program similarities and differences. As inferred earlier, a descriptive style was more suitable here than a strictly analytical one since the degree or amount of each component was seldom indicated on the charts, and not very often in the documents, but had to be taken into account. For instance, if special remedial classes were provided for one hour a day, five days a week, this had to be mentioned, particularly if the comparison involved another program with a quite different "rate of treatment".

Under the last heading, "tentative conclusions", the authors attempted to sum up the picture presented by the collected data, in conjunction with the original documents and any additional background information from site-visits and other contacts. Hypotheses, or probable reasons, for success and failure in the programs being compared, were set up and discussed. The technical comparisons ranged from factual description to speculation at this point, but the speculation was on the basis of the data collected. It was aimed solely at attempting to identify some of the concomitants of success.

RESULTS AND CONCLUSIONS

The Context

Before the results of this study are considered, the authors wish to emphasize the exact context in which these results have been obtained. The methods and procedures for the study have been discussed already, but the question of biases in the results needs to be dealt with.

First, the authors are very aware of the danger of their own "investigator bias". As behavioral scientists, they have acquired by training and experience certain mental sets towards educational problems, and naturally enough have their own ideas about how to succeed in compensatory education. This bias might well be responsible for the authors selecting their facts to support a particular theory of teaching and learning in schools for the disadvantaged. The bias of the authors is towards rigorous analysis and specification of objectives, diagnosis of pupils' needs by testing and recording, individualizing of instruction, and positive reinforcement techniques. They also regard the comprehensive evaluation of programs as essential if money is not to be wasted and if progress is to be made in developing better methods.

Investigator bias may have influenced the analysis of data from the programs. These data were relatively objective originally, being stated as facts and figures. But to place the data in the appropriate category in the component analysis, judgements had to be made. Some of the component categories were more susceptible to bias than others. For instance, the component labeled "team teaching" might be defined quite widely to include all attempts by two or more teachers to share the teaching of their classes, or it might be applied strictly, referring only to those programs in which a proper team was established, which held regular meetings and within which each member had clearly defined duties. The authors preferred the second definition, but the data demanded a definition more like the first. Similarly, the component called "parental involvement" had no fixed boundaries. Nothing would have been achieved by splitting this component into two or three or more, to correspond with each of the types of parental involvement found in the programs, because then only one or two programs would have had each separate component, making statistical analysis quite worthless.

Thus it was possible for investigator bias to enter into the analysis of data; it was the most likely in the categorization of data, since both the categories themselves and the items to be placed in them, were subject to some extent to the investigators judgements.

When the authors came to the stage of attempting to identify patterns in the component analysis and in the technical comparisons which were written (see Appendix), they were again aware of the danger of investigator bias, since the data alone were not adequate as a basis for conclusions. Constantly, probabilities were being dealt with rather than certainties. What is more, choices had to be made among probabilities. After studying the data for some time, the authors found themselves in a moral dilemma. From the strictest scientific point of view, no secure foundations for success in educating disadvantaged children could be specified; that is to say, within the limits of this study and of the programs it analyzed, no components were discovered which were unequivocally associated with success rather than failure. From the strictest scientific viewpoint, the results of the study were that there is as yet only inconclusive evidence about the concomitants of success (and of failure). On the other hand, the authors perceived a consistency in the patterns before them (as is explained in the next section), and felt the need to report this to the National Advisory Council, not as scientific evidence fully supported by statistical analyses, but as a set of opinions based on considerable study of programs for disadvantaged children.

In summary, the authors cannot prove from this study that their conclusions will provide the foundations for success in educating disadvantaged children. Rather, they affirm that these conclusions represent considered opinions, prepared after detailed analyses, of what is most likely to provide such foundations.

Results

Discussion of Overall Component Comparisons. On analyzing the 18 successful and 25 unsuccessful programs, a total of 91 components were identified. Of these, 23 were personnel components, 27 were methodological, 25 were services, and 16 were equipment. Tallies were made of the frequencies with which these components appeared in successful and unsuccessful programs in hopes of finding some components more frequently associated with success than with failure (and vice-versa). The components which were found to have the largest differences in frequency of occurrence between successful and unsuccessful programs are listed below in Table 3.

Inspection of Table 3 quickly reveals that no dramatic differences were found. Chi Square analyses performed on the data provided statistical support for this observational conclusion. Content Orientation was found to be significantly more frequently associated with successful than unsuccessful programs ($p < .01$), a Pupil Teacher Ratio of 6 to 10 was more commonly associated with success than failure ($p < .05$), and Cultural Programs were more frequently found in unsuccessful projects ($p < .05$), but these results cannot be meaningfully interpreted. Statistically speaking, since 91 comparisons were made, one would expect to find as many "statistically significant differences" on the basis of chance alone as were, in fact, obtained.

Despite this lack of statistical support, it is interesting to note that the components showing the largest differences were in close accord with the biases of the authors described under Context. There is only one "chance" in ninety-one that Content Orientation would show the largest difference, yet it is probably safe to say that the great majority of instructional technologists would have picked this component as most likely to be associated with success in cognitive learning!

Table 3.

SUMMARY OF COMPONENT ANALYSIS

Component	Frequency of Occurrence	
	Successful	Unsuccessful
1. Qualified Administrator	18/18	13/25
2. Qualified Counselor(s)	3/18	8/25
3. Pupil-Teacher Ratio 1:6 to 10	5/18	0/25
4. Pupil-Teacher Ratio 1:11 to 15	6/18	2/25
5. Parental Involvement	9/18	6/25
6. Language (Verbal Skills) Teaching	6/18	12/25
7. Content-Oriented Approaches	5/18	0/25
8. Concept Formation Teaching	3/18	0/25
9. Tightly Controlled Teaching	3/18	0/25
10. Individual Tutoring	4/18	0/25
11. Home Visits by Social Worker	5/18	1/25
12. Cultural Program	1/18	9/25
13. Games and Toys	2/18	8/25
14. Language Masters/SRA Reading Labs	7/18	6/25

The lack of sound statistical evidence derived from this analysis does not, furthermore, preclude the drawing of meaningful conclusions from a more detailed examination of the data. It must be kept in mind, for example, that the component frequency tabulations took no account of qualitative differences. Parental involvement was parental involvement regardless of whether it amounted to an hour per semester or an hour per day. It is also true that a component such as parental involvement might have a positive effect on young children but a negative effect on programs for older children. Any analysis made across all programs would, of course, obscure this type of relationship.

Two additional comments are relevant here. First, the sources from which information about program components was drawn differed widely in quality. As a result it is quite possible that a few components in some of the programs were not identified. It is also possible that normal personnel, service, and equipment features of schools or school districts were mistakenly identified as components of programs. Second, as mentioned earlier, parts of the component analysis required the making of rather arbitrary decisions. Illustrative of this problem was the difficulty in deciding where to draw the distinction between child-centered and content-oriented programs.

In summary, there are many statistical and interpretive difficulties associated with the type of analysis reported here. Certainly no firm conclusions can be drawn from the data presented, yet the authors would argue that these data do provide some support for the recommendations made in the final subsection of this report. This support, furthermore, is strengthened by the following analysis of groups of matching programs although these groups were too small to permit statistical treatment.

Discussion of Matching Program Component Comparisons. Detailed individual analyses were made comparing each of the successful programs with either one or two matching unsuccessful programs. These analyses are presented in the Appendix to this report and the reader is referred to the Appendix for details it is not possible to repeat here. This discussion represents a summary and integration of the individual comparisons, grouped according to the age of the pupils into preschool programs, elementary school programs, and secondary school programs.

In the four preschool comparisons, it is fairly clear that a program of less than two months duration has little value at all, that teacher training is essential, and that objectives must be clearly defined beforehand. The successful programs all had certain features in common:

careful planning, including the definition of academic (cognitive) objectives, teacher training (usually including frequent reviews of the program), and much use of small groups. Materials were selected carefully for their relevance to the objectives. Two of the programs stressed diagnosis of individual pupils' needs. Three of them limited their curriculum and methods strictly to what was needed to achieve the objectives and meet the needs. Parental involvement featured as important in only one of the successful programs. One program removed competing stimuli from the classroom. To summarize, success in the preschool seemed to be founded upon:

a) careful planning, including statement of objectives;
b) teacher training in the methods of the programs;
c) small groups and a high degree of individualization;
d) instruction and materials closely relevant to the objectives.

At the elementary level, ten comparisons were drawn. Instruction irrelevant to the stated objectives of the programs seemed to be the most frequent reason for failure at this level. No success factor was common to all ten of the comparisons, but academic objectives clearly stated and active parental involvement seemed to be most important, followed by a high intensity of treatment (that is, pupils were given many hours in the program), an emphasis on directly attacking pupils' problems, and the use of reading specialists, small groups and individual tutoring. Also important at this level were teacher training and the supervision and training provided for aides. While the patterns are not so marked, it seems as though success in the elementary school is largely dependent upon:

a) academic objectives clearly stated;
b) active parental involvement, particularly as motivators;
c) individual attention for pupils' learning problems;
d) high intensity of treatment.

Of the eighteen comparisons, four were at the secondary level, where the concomitants of failure were fairly obvious: programs failed because they were too "diluted", or because they had very loosely structured objectives, or too wide a range of goals. Surprisingly perhaps at this level, an academic bias was missing from several of the secondary programs. The ones that succeeded all had clearly stated academic objectives, often based on individual diagnosis. They incorporated tightly controlled teaching linked to these objectives. In two of them, small group work was important. Successful programs at the secondary level seem to be founded upon:

a) academic objectives clearly stated;
b) individualization of instruction;
c) directly relevant instruction.

Recommendations

From the analyses undertaken in this study there emerged three lists of factors which appeared to be associated with cognitive achievement in compensatory education. The lists were for preschool, elementary, and secondary programs, respectively, but were remarkable for their similarities.

The authors put forward these lists as representing their considered opinion, based on the evidence they had available, regarding the foundations for success in educating disadvantaged children. Other factors were examined, but not selected for inclusion in the lists for reasons explained in the study.

Preschool programs

a) careful planning, including statement of objectives;
b) teacher training in the methods of the programs;
c) instruction and materials closely relevant to the objectives;

Elementary programs

a) academic objectives clearly stated;
b) active parental involvement, particularly as motivators;
c) individual attention for pupils' learning problems;
d) high intensity of treatment;

Secondary Programs

a) academic objectives clearly stated;
b) individualization of instruction;
c) directly relevant instruction.

Since these factors are recommended, clearly the converse of each should be avoided far more than is now the case. The analyses repeatedly showed that the mere addition of personnel, services, or equipment was of no avail unless each addition was carefully integrated into a well planned program and made relevant to the program's objectives.

These recommendations are made subject to the limits and provisos of the study, which have been fully discussed in this report.

APPENDIX

Technical Comparisons of Matched Programs

Note: Full details of each of the successful programs used in these comparisons, and references for all the reports used in compiling the data for the comparisons, will be found in Hawkridge, D.G., Chalupsky, A.B., and Roberts, A.O.H., A study of selected exemplary programs for the education of disadvantaged children, American Institutes for Research, Contract No. OEC-0-9-089013-3515 (010), Office of Education, U.S. Department of Health, Education and Welfare, September 1968.

Comparison 1

The Programs

A. Successful: The Preschool Program of Fresno, California.

B. Unsuccessful: The Experience Record Project in Head Start, Detroit.

Their Objectives

A. Preschool: To develop skill in using the English language among deprived children, during a year of preschool.

B. Experience Record: To develop perceptual and motor skills in deprived children, during a summer program.

Students Served

A. Preschool: Mexican-American, Negro, and white children aged 3 to 5 years from poverty areas, many of them Spanish-speaking in the home. In 1967-68, 750 students were in the program.

B. Experience Record: Negro and white children aged 4 to 5 years from poverty areas. Eighty-eight students were in this program.

Assessment of Cognitive Achievement Benefits

A. Preschool: The Peabody Picture Vocabulary Test was used in 1966-67 and again in 1967-68. The results showed significant gains in vocabulary (the scores also can be translated into IQ in the case of this test) from pretest to posttest. No comparison group was available, but as the gains were considerable, the differences between the means being 12 or more points of IQ, there is little room for doubt about the success of the program.

B. Experience Record: The 1967 summer program was evaluated by the Brenner Development Gestalt Readiness Test, and the Peabody Picture Vocabulary Test. The assessments made for the former test showed the Experience Record Project to have been successful. But a comparison of the PPVT scores on pretest and posttest for the Experience Record Project experimental and control students showed no significant benefit from the project. Both control and experimental students showed small but insignificant gains. Eight weeks elapsed between tests.

Analysis of Program Components

A. General

While it might be suggested that the two programs differed in objectives because the Preschool was apparently aimed chiefly at language development, in fact both programs were designed to prepare children for entry into the formal education system. Both used the PPVT as a prime indicator of success. The Readiness Test used in the Detroit project is open to teacher bias in ways that the PPVT is not, hence it is useful for comparison purposes to have results of the PPVT for both programs. The populations were quite similar; the Mexican-American preponderance in the Fresno program was not to its advantage, as detailed figures in the reports show. The outstanding difference between the programs was the duration.

B. Personnel

In both programs, qualified administrators supervised activities. Both programs also employed qualified teachers, but experienced difficulties in hiring teachers with preschool experience and qualifications.

Both programs used adult teacher aides, usually parents or members of the local (poverty) community; in Fresno, however, much more time was available to train these aides and to integrate them properly in the instructional situation. A low ratio of about six pupils to each adult was achieved by judicious use of the aides, together with parent volunteers (unpaid). The aides also helped the teachers with meetings with parents. The Detroit program used aides, including one high school student in each classroom and one "research aide" per school, but did not develop its system as well. The research aide assisted in making observations and filling out the Experience Record, but little planning was done to make the best use of the other aides. It was left to the individual teacher.

The Preschool Project, because it was over a full school year, was able to provide more comprehensive care for the children than in the Detroit program, and medical-dental-nursing personnel were part of the project.

Secretarial assistance was available in both programs.

C. Methods

In the Preschool Project a wide range of activities filled each school day: language, music, art, and science, taught through small groups mostly and including games, field trips and much conversation. In short, quite a typical preschool curriculum. In the Experience Record program, the Children's Experience Record was used to highlight daily for the teachers the kinds and depth of experiences the children should and did have in auditory and visual discrimination, concrete and abstract quantitative thinking, fine and gross motor control, and tactile learning. Many of the activities were chosen by the teachers from an experimental handbook, Young Children in School, which offered a set of experiences thought to be valuable to children as preparation for school. The actual day-to-day activities were very similar to those in the Fresno Preschool. Neither program appears to have placed undue emphasis on those aspects of vocabulary tested by the PPVT. Greater individualization was achieved, however, in the Fresno program, where aides were actually made responsible for many instructional sessions with their own small groups of four to six pupils each.

D. Services

Extra nutrition was provided by both programs. Health services were provided at Fresno only.

In-service training for teachers and aides was a prominent feature at Fresno, together with regular meetings of parents. These were all lacking in the Detroit program, probably on account of its short duration.

E. Equipment

The two programs appear to have been equally well-equipped, but the use of the equipment was better planned and far less haphazard in Fresno.

Tentative Conclusions

As stressed earlier, the Detroit program suffered from being too short. From comparing it with the Fresno one, it is possible to say that eight-week summer programs of this nature are unlikely to produce significant results, while a well-planned and carefully-executed one-year program like that at Fresno does produce such results. The exact influence of the two programs on the later in-school performance of the pupils cannot be judged, of course, but on the basis on which they have been compared, the Fresno project is clearly a success and the Detroit one a failure.

If duration was the major component for success in this setting, several minor components (all of them dependent on the program being a longer one than was the case at Detroit) can be identified:

a) extensive use of aides and parent volunteers to achieve greater individualization;
b) careful training of these aides and volunteers;
c) a high degree of parental involvement.

Comparison 2

The Programs

A. Successful: Perry Preschool Project, Ypsilanti, Michigan.

B. Unsuccessful: Preschool Group Experience Project, Fremont, California.

Their Objectives

A. Perry Preschool: To improve the reading, language and mathematics achievement of disadvantaged elementary school children through early preschool intervention.

B. Experience Project: To increase the language skills and social competency of disadvantaged kindergarten children.

Students Served

A. Perry Preschool: The students were mostly 3- and 4-year old Negro disadvantaged children. Each year about 24 children were in the preschool, which operated (as described here) for 5 years. Evaluation data are available for the follow-up of these children in elementary school. The initial IQ's of the children were usually below 85.

B. Experience Project: The students were 3- and 4-year old Caucasian and Mexican-American disadvantaged children. The only year the program operated, some 50 children were under observation, of whom about 35 were experimentals. The controls did not attend preschool.

Assessment of Cognitive Achievement Benefits

A. Perry Preschool: California Achievement Tests in reading, language, and mathematics were used at the end of first and second grade for pupils who had been in the preschool and for controls. The results showed the experimentals to be achieving at significantly higher levels than the controls.

B. Experience Project: Testing with the Peabody Picture Vocabulary Test, the Illinois Test of Psycholinguistic Abilities, and the Cain-Levine

Social Competency Scale, the investigator collected data which showed no significant differences between experimentals and controls.

Analysis of Program Components

A. General

While it is true to say that the Perry Preschool had long-term objectives compared with the Experience Project, both programs attempted to provide preschool experiences which would assist pupils to function well once in grade school. (Unfortunately, no long-term follow-up was done for the Experience Project.) The Peabody Picture Vocabulary Test and the Illinois Test of Psycholinguistic Abilities were also used to test progress of pupils while they were in the Perry Preschool, however. A comparison of these results with those from the same tests in the Experience Project shows the Perry Preschool pupils outperforming their controls, whereas the experimentals in the Experience Project were not better than the controls. Hence the programs are comparable at the level at which they operated, if not at the level at which they aimed.

The populations served did differ ethnically but not socio-economically. The ethnic difference might have favored the Experience Project, which failed.

B. Personnel

Both programs were supervised by a qualified administrator, although the Perry Preschool was under the control of a specialist in compensatory education, while the Experience Project was controlled by the supervisor of preschool programs. Qualified teachers were employed in both places. Aides were not employed in the Perry Preschool, but were in the Experience Project.

A curriculum supervisor and a program supervisor were employed in the Perry Preschool, but the school district supervisor did most of the planning for the Experience Project.

Four teachers were available for each class of 24 in the Perry Preschool; in the Experience Project a teacher and her aide worked with about 18 pupils. Parents were more deeply involved in the Perry Preschool, largely because of 90-minute tutorial visits made to the homes each week by the teachers.

C. Methods

The areas studied in the Perry Preschool were altered slightly each year, but by 1966 they had stabilized fairly well. The cognitive objectives were ones dealing with spatial and temporal relations, seriation, classification, symbolization and verbalization. Everything done in the program, ranging from classroom activities to home tutoring to class field-trips, were focussed on these objectives.

In the Experience Project,the language skills to be studied were expressed in very general terms which, summed up, included chiefly labeling and self-expression; the social competency goals were those which amounted to classroom behavior which would please the teacher (being "good", quiet, clean, tidy, industrious, not quarrelsome, polite).

(The difference in intellectual quality is marked. Of course, the Perry Preschool had far longer to develop its methods. On the other hand, the Experience Project had access to reports of Perry and many others, as a basis.)

The teaching in the Experience Project was curriculum-centered. Many early grade favorites (the family, community workers, food, etc.) formed the basis for everyday work, and the skills emphasized at the Perry Preschool were only taught where appropriate to the topic in the Experience Project. In the Perry Preschool, all work was subordinated to the acquisition of the skills to be taught. This was a vital difference. In terms of actual methods used (tutoring, field visits, dramatization, games, and so on), the two programs did not differ widely. The degree to which each was used did not differ greatly either (with the exception of tutoring, which was much more important at the Perry Preschool), but the lessons drawn from the material taught did differ. Academic achievement of a special kind, involving the cognitive skills already mentioned, was the constant goal of the Perry Preschool.

D. Services

Extra nutrition was provided by both programs.

Team teaching featured in the Perry Preschool Program. Teacher training, both before and during the program, was provided in both cases, but was far more extensive and organized in the Perry Preschool.

Group meetings for parents occurred regularly in both programs.

Children were in the Perry Preschool for two years, but the Experience Project did not continue beyond the first year.

E. Equipment

The Experience Project was provided with an extremely wide range of equipment (probably more than could be used), although the Perry Preschool was certainly not under-equipped. The difference again lay in the fact that everything at the Perry Preschool was selected to serve the cognitive goals established, whereas a "saturated environment" was provided at the Experience Project.

Tentative Conclusions

The lack of success of the Experience Project can be attributed to:

a) no rigor in choosing curriculum, methods or materials;
b) no attempt to reduce the haphazard, non-diagnostic approaches to the students' problems.

By contrast, the Perry Preschool seems to have succeeded on account of:

a) very careful planning and selection of curriculum and materials;
b) a judicious combination of small-group, large-group and individualized (tutorial) work, offering pupils a high "intensity" of instruction;

c) lengthy and detailed teacher training, particularly through constant on-site review of the program;

d) direct attack on basic cognitive learning problems from many angles in every lesson.

Comparison 3

The Programs

A. Successful: The Diagnostically-Based Curriculum in Bloomington, Indiana.

B. Unsuccessful: The Johnson-Western Pilot Project, Racine, Wisconsin.

Their Objectives

A. Diagnostically-Based Curriculum: To improve language, comcept, and fine motor development in disadvantaged preschool children.

B. Johnson-Western: The investigators identified the following as essential for success in elementary school and the program was designed to teach them: language development (listening, symbolization, articulation, etc.), social skills, a sound self-concept, and an awareness of cultural differences. The program itself stressed language development, and this was directly tested, as well as IQ.

Students Served

A. Diagnostically-Based Curriculum: The students were Appalachian white and a few Negro children from very low socio-economic levels, aged 5. Their Stanford-Binet scores were between 50 and 85.

B. Johnson-Western: An experimental group of 20 children aged about 5, members of the 1963 kindergarten intake at a Racine school, was compared with a matched group at another school. The pupils were mostly Negro; all fathers were laborers. The selection criteria for both groups included low scores on several tests and questionnaires.

Assessment of Cognitive Achievement Benefits

A. Diagnostically-Based Curriculum: For each of three successive years, the design of the experiment was the same: about 15 children were placed in an Experimental Preschool, about 15 in a Kindergarten Contrast, and about 15 in a control group called At Home Contrast. The children in the Experimental Preschool scored significantly better gains on the Stanford-Binet and the Columbia Mental Maturity Scale than did the children in the other two groups. Similarly, the experimentals scored significantly better gains in language on the Illinois Tests of Psycholinguistic Ability and the Peabody Picture Vocabulary Test than did the others.

B. Johnson-Western: The experimentals failed to make significant gains on the Stanford-Binet vocabulary sub-scores while in the program, although both experimentals and controls showed significant gains in first grade, when they were outside the program. On the Illinois Tests of Psycholinguistic Ability, the experimentals made gains which were significant between pretest and posttest on some of the sub-tests, while the controls did not. No statistical comparison of the two groups was undertaken on the ITPA, however, and no conclusions should be drawn.

Analysis of Program Components

A. General

The objectives of the Bloomington project were broadly similar to those of the Johnson-Western program; both aimed primarily at language development as a foundation for success in elementary school.

The populations served were different ethnically, but alike in socioeconomic background.

The Stanford-Binet and the ITPA were common to both. Other tests used also assessed language development, the chief objective of the programs. The full battery of tests generally confirmed the success of the Bloomington project and the relative failure of the other program.

B. Personnel

Qualified administrators supervised both the programs, and the children were taught by certificated teachers. The Bloomington project enjoyed a lower ratio of pupils to adults than the other project, there being aides and a reading specialist available to help the teacher. Groups of about eight were often used, and the diagnostically based curriculum presupposed a good deal of individual attention. In the Johnson-Western project, one teacher was responsible for 20 children.

C. Methods

The Bloomington project used fairly conventional preschool methods, but they were used in a highly structured setting. Considerable testing was done early in the project to determine the exact learning needs of each pupil. A formal language lesson each day was followed by directed activity. The day also included a story, gross and fine motor activities, a sharing time, directed play, a snack and lunch. A weekly diagnostic rating scale was used for each child. Social competency was taught through the directed activities and the sharing time in particular, but also at every suitable opportunity. Field trips were taken, but they were carefully prepared for and structured to help meet the pupils' needs. Post-trip sessions were regarded as very important.

In the Johnson-Western program, half the day was occupied by the normal kindergarten curriculum, the other half in teaching for the specific objectives of the program. The activities reported for the program included dramatization with puppets, pupil-written and illustrated newsletters, fifty field trips (in eight months), singing, and cut-paper projects.

D. Services

In-service training of teachers was non-existent in the Johnson-Western program. The staff of the Bloomington project, on the other hand, met very frequently and accomplished an incredible amount of detailed planning involving each child's progress as much as it did the curriculum for the whole class. Thus the aides and the reading specialist became well-informed about the teacher's and project director's ideas of what should be done.

Ancillary services, such as food, and health care, were provided in the Bloomington project and not in the Johnson-Western program. The parents were not involved in Bloomington, except where absolutely necessary, but the Johnson-Western program did not have much contact with them either.

E. Equipment

The programs were equally well-provided with a plethora of materials and equipment, typical of the middle-class kindergarten.

Tentative Conclusions

There is evidence from these two programs that the success of the Bloomington project was based chiefly upon:

a) careful diagnosis of pupils' individual needs;
b) teaching limited by these diagnoses;
c) carefully trained staff;
d) a small-group approach;
d) considerable planning.

Comparison 4

The Programs

A. Successful: The Academic Preschool in Champaign, Illinois.

B. Unsuccessful: The Johnson-Western Pilot Project, Racine, Wisconsin.
The Academic Head Start Preschool, Harrisburg, Pennsylvania.

Their Objectives

A. Academic Preschool: Fifteen specific objectives were listed for this program, dealing with elementary but fundamental aspects of logic and vocabulary. For example, the correct use of not, knowledge of polar-opposites, simple logical deductions (of the if-then type), counting, naming of colors, and so on. The first nine goals could be said to be associated with words and constructions, while the others were connected with numerical and reading skills. All the goals were developed with the need in mind to prepare the children for entry into the formal education system. The goals were pursued very directly by the teachers, but the tests used (see below) did not test them directly.

B. Johnson-Western: The investigators identified the following as essential for success in elementary school and the program was designed to teach them: language development (listening, symbolization, articulation, etc.), social skills, a sound self-concept, and an awareness of cultural differences. The program itself stressed language development, and this was directly tested, as well as IQ.

C. Academic Head Start: This was a short-term (8-week) replication of the Academic Preschool curriculum in language only, using the same objectives.

Students Served

A. Academic Preschool: Different groups were involved in this program in various years, but the results quoted below refer to an experimental group of about 15 children aged 4-5 who were in the program for 2 years 1965-67. They were mostly Negro, of low socio-economic status.

B. Johnson-Western: An experimental group of 20 children aged about 5, members of the 1963 kindergarten intake at a Racine school, was compared with a matched group at another school. The pupils were mostly Negro; all fathers were laborers. The selection criteria for both groups included low scores on several tests and questionnaires.

C. Academic Head Start: An experimental group of 46 4- and 5-year old children eligible for the 1966 Head Start Program (i.e., from poverty areas), mostly Negro, was compared with similar controls. The experimental group attended for 8 weeks.

Assessment of Cognitive Achievement Benefits

A. Academic Preschool: The Stanford-Binet Intelligence Test and the Wide Range Achievement Tests were the chief measures of success in this program. Results on the Stanford-Binet showed the experimentals to have significantly higher scores than the controls at the end of both the first year of treatment and the second. Before entry into first grade, the experimentals were achieving at the second grade level in both reading and arithmetic, and only slightly lower in spelling. These results were achieved in spite of the fact that the curriculum did not specifically prepare the pupils for these tests.

B. Johnson-Western: The experimentals failed to make significant gains on the Stanford-Binet vocabulary sub-scores while in the program, although both experimentals and controls showed significant gains in first grade, when they were outside the program. On the Illinois Tests of Psycholinguistic Ability, the experimentals made gains which were significant between pretest and posttest on some of the sub-tests, while the controls did not. No statistical comparison of the two groups was undertaken on the ITPA, however, and no conclusions should be drawn.

C. Academic Head Start: The PPVT and two sub-tests of the ITPA (auditory-vocal association and auditory-vocal automatic) were used to assess achievement. The results showed that the experimentals had made no significant gains over the controls.

Analysis of Program Components

A. General

The objectives of the Academic Preschool and the Academic Head Start were more limited than those of the Johnson-Western program, but all were aimed primarily at language development as a foundation for success in elementary school. The populations served were very similar in all three.

Although it is true that different tests were used in the programs, the Stanford-Binet vocabulary sub-test was common to two, and two ITPA sub-tests to the other two. All the tests used assessed language development, the chief objective of the programs. The other tests used confirmed the remarkable success of the Academic Preschool and the relative failure of the other two programs.

B. Personnel

Qualified administrators supervised all the programs, and the children were taught by certificated teachers. The Academic Preschool enjoyed a far lower ratio of pupils to teachers than the other two projects, there being only five pupils in the charge of each teacher, who taught them for 2 hours a day. In the other two projects, one teacher was reponsible for 20 children. Parents and aides were not used in the Academic Preschool classrooms, nor in the Academic Head Start.

C. Methods

In the Academic Preschool, the pupils were divided into three groups on ability. Language, arithmetic, and reading sessions occupied large segments of each day. During the language class the teacher did not deal with themes (like "My School") but with constructions (e.g., polar-opposites). In the arithmetic session counting and adding were emphasized. Reading was taught using a modified i.t.a. approach and a limited vocabulary. A limited number of toys and games were available. Each was strictly educational. The rooms were unadorned. Home visits were made by teachers and college students. Some field trips were organized.

In the Johnson-Western program, half the day was occupied by the normal kindergarten curriculum, the other half in teaching for the specific objectives of the program. The activities reported for the program included dramatization with puppets, pupil-written and illustrated newsletters, fifty field trips (in eight months), singing, and cut-paper projects.

The Academic Head Start program replicated the Academic Preschool's language curriculum for only fifteen minutes each day, the other 2-3/4 hours being devoted to a conventional Head Start program. "Drill" in the same language areas as the Academic Preschool was the method during the quarter hour daily.

D. Services

In-service training of teachers was non-existent in the Johnson-Western program and very limited in the Academic Head Start program because of the short time available. In fact, the Academic Head Start teachers apparently scarcely knew what was expected of them in the special daily quarter hour. The Academic Preschool on the other hand, took considerable trouble to train all the teachers in the methods and philosophy of the program.

Meetings with parents were a feature of the Academic Preschool, while such contacts were incidental in the other two programs, parents being neither encouraged nor turned away.

E. Equipment

As indicated earlier, the Academic Preschool operated with a very limited range of equipment, each piece being chosen for its educational value rather than as yet another stimulus. Audio-visual aids were used, but only when strictly required. The other two programs used a plethora of materials and equipment, particularly the Johnson-Western program, and were much closer to the typical middle-class kindergarten.

Tentative Conclusions

There is a good deal of evidence from these three programs to suggest that the undoubted success of the Academic Preschool was based chiefly on:

a) clearly defined objectives;
b) teaching limited by these objectives;
c) an absence of too many competing stimuli;
d) carefully trained teachers;
e) a small-group approach.

The lack of success in the Academic Head Start was almost certainly due to the brevity of exposure (10 hours per pupil, in quite large groups).

The Johnson-Western program suffered from the "opposite" of each of the items a) through e) above.

Comparison 5

The Programs

A. Successful: Homework Helper Program, New York City.

B. Unsuccessful: Project Motivation, Minneapolis, Minnesota.

Their Objectives

A. Homework Helper Program: To assist failing elementary school children achieve academic success (particularly in reading skills) through individualized tutoring. To assist high school students remain in school (through economic aid) and to motivate them toward improved academic achievement.

B. Project Motivation: To support and reinforce what children learn in the classroom through an individualized tutoring program. To expand their horizons and experiences and to provide them with models of adult experience.

Students Served

A. Homework Helper Program: The pupils were 410 failing 4th and 5th graders in Lower East Side New York schools in areas where one third of the housing was classified as sub-standard. Median family income was estimated at $69/week. The ethnic composition of both experimental and control groups was about 50% Puerto Rican, 30% Negro, and 20% white. Approximately equal numbers of males and females were involved. Of the 240 11th and 12th grade tutors, 19% were Puerto Rican and 18% were Negro. They had IQ's over 90, were reading at grade level or better, and were recommended by their schools.

B. Project Motivation: Twenty-eight students were nominated by their 3rd, 4th, 5th, or 6th grade teachers in the two cooperating elementary schools. Teacher nominations were based on the following criteria:

1. achieving below potential
2. needs more broad social experience
3. needs better motivation for school
4. needs improved self concept
5. needs higher level of aspiration
6. needs to relate or identify with a stable individual.

These children were found to be below the Minneapolis average on standardized tests of mental ability and reading achievement. Their school attendance was highly variable and their academic achievement was low. The tutors were 22 white college women and 6 white college men all with better than average scholastic averages.

Assessment of Cognitive Achievement Benefits

A. Homework Helper Program: Evaluation results are available for the 1963-64 school year and involve comparisons between 356 experimental and 157 control pupils. About 100 of the experimental pupils were tutored for two 2-hour sessions a week, while the remainder received only one 2-hour sessions per week. Reading achievement was measured by pre- and posttesting with the New York Tests of Growth in Reading, Level C, Form 1 (Revised). During the five calendar months between the pre- and posttests, those students who received four hours of tutoring a week gained six months in reading grade level. Those receiving two hours a week of tutoring gained five months, whereas the control group gained 3-1/2 months. The difference between the four hour group and the control group was statistically significant at the .05 level.

Reading achievement of the tutors involved in this program was also assessed by means of pre- and posttesting with alternate forms of the Advanced Level of the Iowa Silent Reading Test (Revised New Edition). The Quick Word Test was also administered. In the seven months of tutoring between testings, the experimental sample averaged 3.4 years of achievement gain as measured by the Iowa Test, while the control sample composed of high school students who were eligible for tutoring assignments, but were not selected, gained 1.7 years on the average. This difference between experimental and control groups was statistically significant at the .001 level, although the total gain as measured by the test was probably somewhat inflated due to the effect of experience with the test.

B. Project Motivation: The Gates Reading Test (Grade 3) and the California Test of Mental Maturity (Grade 2) were administered to the experimental group and to a control group of subjects who were nominated for the program but were not selected. There were no significant differences between groups on any of these pretest measures. There were also no significant differences between experimental and control groups in terms of absences during the year prior to the project, or in terms of school grades received during the year prior to the project. At the end of one school year, both control and experimental subjects were given the Bond-Balow-Hoyt New Developmental Reading Test, Form L-1 to assess their reading achievement. There were no statistically significant differences between the two groups on any of the three subtests or on the total score. There were also no differences between the experimental and control groups with respect to school grades achieved during the school year.

Analysis of Program Components

A. General

The "treatments" provided by these two programs were quite different. The two or four hours per week which students in the Homework Helper Program spent with their tutors were largely devoted to academic pursuits. Project Motivation was considerably more child centered. Of the average 87 hours the tutor spent with each child, approximately 30% was spent on home activities (reading, games, and conversation), another 19% included school work (homework, reading), about 13% of the child's time was spent with his tutor at the university (campus, dorm, concerts). Finally, about 22% of the time was devoted to community activities (art museum, stores, libraries). Another major difference between the two programs was that the Homework Helper Program employed high school students as tutors, while Project Motivation made use of college students.

B. Personnel

The main personnel feature of these two programs was that both employed tutors without special qualifications, and both worked on a one to one pupil-tutor ratio. The Homework Helper Program also made use of master teachers (teachers with at least five years experience and licensed by the Board of Education of New York City). These master teachers trained the tutors by day to day supervision and guidance, and in afternoon workshops one day per week. They also assisted tutors with guidance and instructional problems of pupils when these arose. Project Motivation, on the other hand, provided only three brief training sessions for the tutors, and the tutors were subsequently unsupervised throughout the remainder of the program.

C. Methods

Both programs provided help with homework as a major program ingredient. The Homework Helper Program also provided remedial reading instruction. Project Motivation, on the other hand, made use of field trips, and a fairly wide variety of non-academic activities.

D. Services

Both programs provided in-service training for the tutors, although as pointed out above, tutors in the Homework Helper Program received substantially more training and supervision than Project Motivation tutors. Counseling sessions were also scheduled for participants in the Homework Helper Program while this was not a feature of Project Motivation. Project Motivation, on the other hand, incorporated a culture program which was not a feature of the Homework Helper Program.

E. Equipment

The Homework Helper Program made use of the SRA Reading Kits as well as tape recorders. No special equipment was involved in Project Motivation.

Tentative Conclusions

The fact that the Homework Helper Program produced measured gains in cognitive achievement while Project Motivation did not is almost certainly due to the fact that Homework Helper Program participants received either two or four hours per week of academically-oriented tutoring. Far less time was devoted to academic activities in Project Motivation. It is also possible that the success of the Homework Helper Program is at least partially due to its employment of high school, rather than college, tutors. It is likely that the resulting smaller age difference enabled these students to identify more closely with their tutors and enabled the tutors to establish better rapport with those they were tutoring. Finally, the Homework Helper Program's use of the SRA reading materials and tape recorders may have contributed to its success. This factor, however, must be considered less significant than the others.

Comparison 6

The Programs

A. Successful: Intensive Reading Instructional Teams, Hartford.

B. Unsuccessful: Craft Project, New York City.
Remedial Reading, Philadelphia.

Their Objectives

A. Intensive Reading Instructional Teams: To provide an intensified team approach to the inner-city child's reading problems. This would include vocabulary and comprehension development, phonics and word attack skills, and individualized reading, literature, and library orientation.

B. Craft Project: To investigate progress in reading using two basic teaching approaches. The Skills-Centered Approach includes two variants -- the basal reader using conventional readers, and the phonovisual system of teaching and identification skills. The second approach, Language-Experience, developed reading materials from the experiences and verbalization of the students, and moved toward individualized reading. There were two variants -- the language-experience method, and a language-experience, audio-visual method, where audio-visual aids were supplemented.

C. Remedial Reading: To raise the reading achievement levels of elementary school pupils; supplementary objectives were to foster better attitudes on the part of pupils toward school work in general and reading assignments in particular, and to provide some measure of staff development in the field of reading.

Students Served

A. Intensive Reading Instructional Teams: The program has been underway since 1965-66; during the 1967-68 year nearly 500 children were enrolled in the program which provides a half-day of reading instruction for a period of nearly 10 weeks. These students were reading below grade level but had the potential for growth in an intensive reading program and the ability to work successfully within a group.

B. Craft Project: In the original study which extended from grade one through grade three, 1,141 children participated through the first grade, 656 children through the second grade, and 1,128 were located in the third grade follow-up. The project was operated in 12 elementary schools where the pupil population was almost 100% Negro. There were 48 experimental classes, 4 in each school. All schools were least a half-year retarded on reading scores. Children were assigned to one of the methods at random.

C. Remedial Reading: Students were recommended for the program by principals, classroom teachers, counseling teachers, and reading adjustment teachers. The program operated in five schools, and class size was 10-15 pupils; therefore at least 50-75 students were involved although this number could be greater if there was more than one class in each school.

Assessment of Cognitive Achievement Benefits

A. Intensive Reading Instructional Teams: Form X and Form U of the California Reading Achievement Tests were administered as pre- and posttests, six to ten weeks apart. In vocabulary, comprehension, and total score, students made statistically significant gains. In 1965-66, nine groups of students in grades 3-5 showed an average gain of seven months on grade equivalents; in 1966-67, nine groups in grades 4-6 progressed from 4.0 to 5.0, a gain of 1.0 grade; in 1967-68, two groups of fourth graders progressed from 3.4 to 4.4, a gain of 1.0 grade; and two groups of fifth graders moved from 3.9 to 5.4, a gain of 1.5 grades. To determine the amount of carry-over, 92 children from the 1965-66 program were retested in the spring of 1967. For two schools the total score showed further statistically significant gains, and for the third school there was no change.

B. Craft Project: Pretests included the Murphy-Durrell Diagnostic Reading Readiness Tests, Metropolitan Readiness Test (Word Meaning and Listening sub-tests), Thurstone Pattern Copying and Identical Forms. One posttest was used, the Stanford Primary I Battery, Form X. The main finding was that differences in class mean reading scores within each method were much larger than differences between methods, and as a result there were no significant differences between the approaches. Craft students did not achieve significantly better scores than non-Craft students on the Metropolitan Achievement Tests in reading.

C. Remedial Reading: The Gates Reading Survey was administered twice, serving both as a pre- and posttest. There were no significant differences on any sub-tests except Comprehension.

Analysis of Program Components

A. General

The general objectives of all three of these programs were very similar: to increase the reading achievement of elementary school pupils who were retarded in this area. The basis on which students were selected for treatment varied, however, with IRIT and the Phildelphia project taking in only the weaker pupils from existing classes, while Craft was employed in whole classes, admittedly from poverty area schools. The tests used yield reading grade equivalents which are broadly comparable.

B. Personnel

All three projects were under qualified supervision and employed teachers to provide instruction. Qualified reading specialists were used in the IRIT and Craft projects but not in Philadelphia, but the Craft project operated with far bigger classes than the other two. Parental involvement was much greater in the IRIT project than in the Craft or Philadelphia projects.

C. Methods

Remedial reading was the principal approach for all three projects. IRIT placed much more direct emphasis on this aspect of its program than did the other two, in which field trips and dramatization provided more variety.

D. Services

Team teaching was a prominent feature of the IRIT program, but was not used in the other two. In-service training was provided for teachers in all three projects, but no evidence is available to indicate whether its quality or length varied. The intensity of instruction provided in IRIT was far more than in the other two, amounting to half the school day for ten weeks at a time. Like Craft, IRIT operated and was evaluated over several years.

Tentative Conclusions

The IRIT program must be considered "successful" because its objectives were attained. In a technical sense, Craft was successful in showing no significant differences between the four methods employed, but when Craft pupils were compared with others no benefits had accrued for them from the special treatment. The Philadelphia project did not attain its objectives.

The three programs cannot be perfectly matched on all parameters (objectives, level, ethnicity, size) but are certainly quite comparable.

The success of IRIT compared with the others appears to be attributable at least in part to:

a) good use of reading specialists;
b) parental involvement;
c) direct emphasis on remedial approaches;
d) high intensity of instruction over a long period.

Comparison 7

The Programs

A. Successful: After School Study Centers, New York City.

B. Unsuccessful: All-Day Neighborhood Schools, New York City.
Lincoln Plus, Manual Plus, Kansas City, Missouri.

Their Objectives

A. After School Study Centers: To help alleviate the learning difficulties children might meet in their classroom. By extending the school day, the program provided additional time, attention, and instruction from the teacher to help these children improve their reading and mathematics, their study habits, and their self-confidence and motivation.

B. All-Day Neighborhood Schools: To improve performance on achievement tests, school grades, and academic tests by extending the school day and working with students in small and informal groups; to develop pupil potential, participation, and student autonomy; to improve personal and social development; to improve extended pupil performance in junior high school.

C. Lincoln Plus, Manual Plus: To raise the achievement level and motivation level; to discover and develop latent talents; to develop a sense of responsibility and respect for self and others.

Students Served

A. After School Study Centers: The students were mainly Negro and Puerto Rican in grades two through six from poverty areas. They were selected for voluntary attendance at the Centers on the basis of one or more years of retardation in reading or arithmetic. The program was begun in 1964 with 167 centers. In 1966-67, approximately 30,000 students participated at least part-time, with 13,000 enrolled in remedial reading or arithmetic classes.

B. All-Day Neighborhood Schools: The children served are in grades one to six and live in depressed poverty areas. Approximately 45% are Puerto Rican, 45% Negro, and 10% Caucasian. The program operates in 14 schools, where a "club" is provided for about 25 children, 3 to 5 p.m.

C. Lincoln Plus, Manual Plus: Reading and speech remediation was provided during school hours for inner-city third through seventh-grade pupils retarded in these areas. After school study centers were attended by the same pupils on a voluntary basis. Most of the pupils were Negro.

Assessment of Cognitive Achievement Benefits

A. After School Study Centers: An evaluation of the 1964-65 program showed that a sample of fourth-grade pupils enrolled in the reading program for 3 to 6 hours a week had made significantly greater gains in reading age than a control group from the same schools. In the 1966-67 program, the pupils in the program showed significant gains over expected performance in reading in each grade level, second through sixth. The test was the Metropolitan Reading Test.

B. All-Day Neighborhood Schools: In 1962 and 1964, pupils in the programs and controls were tested using the Otis Quick-Scoring Mental Ability Tests and the Metropolitan Reading Test. There were no significant differences on pretest or posttest.

C. Lincoln Plus, Manual Plus: While a poorly-designed test program in the first year showed gains for experimentals in this project, the full evaluation covering 1964-65 revealed an inconsistent pattern of gains and losses in average reading grade equivalent for the five grades involved. In some grades control classes made superior gains, in others the experimentals did better, as measured by the vocabulary and reading comprehension sub-tests of the Iowa Tests of Basic Skills.

Analysis of Program Components

A. General

The objectives of all three programs were remarkably similar. All aimed at improving cognitive achievement, especially in reading, by adding to the regular school day. Non-cognitive objectives received most attention in the All-Day Neighborhood Schools and least in the After School Study Centers. This was probably due to the type of leadership available, ranging from the Progressive Movement style of Adele Franklin over

30 years in the ADNS to the austere decentralized Title I approach in the ASSC. The populations served by the three programs differed slightly, in that more Puerto Ricans were included in ASSC and ADNS. The tests employed should not influence the comparison.

B. Personnel

While all three programs were supervised by qualified personnel and staffed by regular teachers, Lincoln Plus did depend on unpaid volunteers after school. Paid volunteers operated ADNS and ASSC. ASSC also had the advantage of many paid specialists, particularly in reading. ADNS and Lincoln Plus, but not ASSC, used personnel from many of these categories, to no avail as far as achievement was concerned: community workers, qualified counselors, high school students as classroom aides (doing strictly clerical, not instruction, tasks), speech therapists, medical and dental staff, psychologists, social workers, and community volunteers including parents. The number of children actually receiving instruction from each teaching adult did not seem to vary among the three programs. Attendance was higher at ADNS but was voluntary in all three.

C. Methods

Help with homework was provided in ASSC and ADNS, but extra direct tuition in reading and arithmetic was very important in all three projects. ADNS also provided some tuition in science and a wide range of peripheral areas. There was much emphasis on creativity in ADNS, but little in the other two. Field trips and dramatization were approaches used in ADNS and Lincoln Plus for enrichment purposes but not in ASSC.

If the programs' methods are characterized, ASSC is seen as using an academic, subject-matter oriented program of studies without frills; ADNS has a very wide curriculum attempting to cater for the whole child; and Lincoln Plus was a chiefly remedial program with some enrichment activities.

D. Services

This picture is borne out when the services offered are examined: ADNS and Lincoln Plus offered extra nutrition, in-service teacher training, regular staff meetings to consider progress, and group meetings with parents; ASSC offered none of these. ADNS also offered a camp, and counseling sessions, where ASSC did not. Some of the ASSC pupils would have access to such services through school, but that was as true for ADNS in recent years (if not in 1939).

All three programs extended the services of the school beyond the end of the normal school day, including the services of the library.

E. Equipment

In the area of equipment, differences between the programs are not so clear. ADNS probably had the best equipment, Lincoln Plus the worst. Regular school equipment was most readily available in ASSC because the day-school teachers also taught in the Centers.

Tentative Conclusions

The success of ASSC was clearly demonstrated in more than one year, and similarly the failure of ADNS, so far as reading improvement is concerned. ADNS probably succeeded in inculcating values and attitudes, which was not an aim of ASSC. Lincoln Plus did not succeed in the cognitive area, and there is very little hard evidence that it succeeded elsewhere.

The three programs are not equally matched. ASSC and ADNS offer a good comparison, being in the same areas of the same city. ASSC evolved from ADNS, it seems. Lincoln Plus has a far bigger in-school component than the others.

The success of ASSC was probably based on:

a) a direct, uncluttered approach to the cognitive problems of the pupils served, without many ancillary activities to meet other anticipated needs;

b) the support of qualified specialists, particularly in reading.

Comparison 8

The Programs

A. Successful: Self-Directive Dramatization, Joliet, Illinois.

B. Unsuccessful: Improving Oral and Written Expression, Racine Wisconsin.

Their Objectives

A. Self-Directive Dramatization: To provide a therapy for emotional problems as well as reading practice, leading not only to improvement in self-concept and reading ability but also to increased desire to achieve. This new leverage may lead to greater successes in other directions.

B. Oral and Written Expression: To bring about a significant improvement in language achievement by providing supplementary language experiences.

Students Served

A. Self-Directive Dramatization: The study involved approximately 120 students from a low socioeconomic level. Ethnic composition was 85% Negro, 10% white, and 5% Mexican and Puerto Rican. These students were in the first, second, third, and fourth grades in a single elementary school serving culturally disadvantaged children.

B. Oral and Written Expression: Seventy-one second grade students, most of whom were classified as educationally disadvantaged. About 50% were Negro and 25% Spanish-American. Many of the children were below grade level both in reading and in mathematics.

Assessment of Cognitive Achievement Benefits

A. Self-Directive Dramatization: The most thorough evaluation was made of the second grade students. Gains made by these students each semester as measured by the reading sections of the Gray-Votaw-Rogers Achievement Test exceeded the .35 grade year expectation by far more than was required to achieve the 0.1 percent level of statistical significance. The overall gain in reading ability for the school year exceeded that of a control group matched to the treatment group in terms of grade, sex, pretest reading ability, and I.Q. by more than 1/2 a grade year. This difference was also statistically significant beyond the 0.1 percent level. Comparisons were also made between the experimental and control groups on other subjects (arithmetic?) which again favored the SDD students by a significant margin (p<.01). The same group of SDD students was followed through the third grade. Measured gains in reading, spelling, and arithmetic all exceeded lapsed time expectations of two grade years by a sufficient margin to attain statistical significance at the .001 level. Comparisons of gains in reading ability between experimental and control groups in grades 1, 3, and 4 all favored the SDD groups. These differences were statistically significant at never less than the 2 percent level of confidence.

B. Oral and Written Expression: Pre- and post-treatment writing samples were obtained from all students as well as from the control group of 14 students who had received a health unit in place of the language experiences. These samples were rated by the teachers. A tape-recorded oral presentation was obtained at the beginning and end of the treatment and rated by teachers. Analyses of variance were computed on all measures except the oral evaluation. None of these analyses revealed any significant differences. Mean ratings which were made of the oral presentation revealed the control group performed better than the experimental group.

Analysis of Program Components

A. General

While the goals and objectives of these two programs were not identical, both placed primary emphasis on providing oral language experiences such as creative dramatics. Both programs also attempted to improve the self-concept of the students involved. The SDD "treatment" was confined to dramatization while the IOWE program encompassed quite a wide range of written and oral language experiences. There were also differences in the activities of the control groups. The SDD control group received standard basal reading instruction whereas the IOWE controls received health instruction. Thus, for the SDD study, the treatment replaced standard reading instruction while in the IOWE program the treatment was an addition to it. Finally, the IOWE program covered only 20 weeks while the SDD program encompassed two 3 1/2 month periods (although significant gains were reported after just the first of these periods).

B. Personnel

There were no significant differences between the two programs in terms of personnel components. Class size was slightly smaller for the IOWE program but classes worked as single units. The larger classes involved in the SDD program were divided into working groups of 5 or 6 students but their activities were largely autonomous, i.e., teacher participation was minimal since there were not enough teachers to go around.

C. Methods

Methods employed by the two programs were highly similar. Both involved remedial reading instruction, both employed dramatization, and both involved student participation in selecting work experiences. The IOWE program employed a wider range of language experiences and also involved field trips.

D. Services

Neither program provided much in the way of services beyond those normally available to children in the schools although the SDD program did incorporate in-service teacher training.

Tentative Conclusions

The two programs discussed above have many things in common yet one was quite dramatically successful while the other was not. The reasons for these varying degrees of success, however, are not at all clear. Possibly the attempt of the IOWE program to provide such a wide range of language experiences in such a short time period detracted from the effectiveness of any single experience. Perhaps the students spent all of their time learning how to participate in the experiences rather than learning the lessons the experiences were designed to teach. An alternative hypothesis is that the SDD program was more successful because it was more individualized with each child choosing the stories he wished to dramatize and the roles he wished to play in the dramatizations. Working in small groups may also have served to provide children with experiences more nearly matching their own particular needs. Finally, teacher motivation may have been significantly higher in the SDD program as a result of the in-service training they received.

No firm conclusions can be drawn on the basis of these two programs. Because they were both well controlled studies involving relatively "pure" treatments, however, they do point the way for further research which should be quite productive in answering some of these unanswered questions.

Comparison 9

The Programs

A. Successful: More Effective Schools, New York City.

B. Unsuccessful: Operation Moving Ahead, Prince Georges County, Maryland.
Grade Reorganization Project, New York City.

Their Objectives

A. More Effective Schools: To prevent academic failure in the early years by starting education at the prekindergarten level and by organizing small classes to insure individual attention for each child's needs.

B. Operation Moving Ahead: To identify children who are educationally deprived, describe their unmet needs, and design programs to meet those needs in order that these children can more nearly realize their educational potential.

C. Grade Reorganization Project: To improve academic competence and achievement in relation to the rate of academic growth normally found among educationally deprived children in the intermediate grades by cultivating the abilities and encouraging the self fulfillment of students, by meeting the individual needs of students more effectively, and by maintaining pupil motivation by providing a curriculum consistent with each pupil's abilities and needs.

Students Served

A. More Effective Schools: Approximately 16,600 students per year (since 1965), prekindergarten through sixth grade. The 21 participating schools were chosen because their student populations had the most severe language handicaps in the New York school system. The combined Negro-Puerto Rican population in all project schools exceeded 50 percent of the total school population.

B. Operation Moving Ahead: Approximately 2300 first, second, and third graders were served. Approximately 74.4 percent of these students were Negro and the rest were white. Children were all from low income families and either scored below grade level on the Metropolitan Achievement Test (Form A, Levels I and II) or were identified by their teachers as needing additional help.

C. Grade Reorganization Project: Some 19,358 students were served. Of these, 22.5% were Puerto Rican, 38.4% were Negro, and 39.1% were "other". Fourteen schools in the New York area were involved, nine of which served economically disadvantaged children and were designated "special service" schools. The project encompassed the sixth, seventh, and eighth grades but evaluation was confined to the sixth grade.

Assessment of Cognitive Achievement Benefits

A. More Effective Schools: The Metropolitan Achievement Tests in Reading and Arithmetic were used, in alternate forms, for a series of twice yearly testings of pupils in the More Effective Schools and also in control schools. During the first year of the program ("old" MES schools) achieved gains in arithmetic exceeded elapsed time expectations in grades 4 and 5 and matched expectations in grade 6 (based on median scores). During the second year ("new" MES schools), achieved gains exceeded expectations in grade 4, were slightly below expectations in grade 5, and equaled expectations in grade 6. After two years in the program ("old" MES schools) the gains achieved by students exceeded expectations in the 4th and 5th grades and equaled expectations in the 6th grade. Comparisons of Reading Comprehension gains made by students in MES and control schools covering grades 2 through 6 generally favored the MES schools. A total of nine comparisons were made; six favored the MES schools, one favored the control schools, and two showed equal gains. In these comparisons, the factor of student mobility was eliminated by considering only students in both the MES and control schools who had remained there throughout the period covered.

B. Operation Moving Ahead: Metropolitan Achievement Tests were administered to first, second, and third grade students at OMA and control schools at the beginning and end of the 1966-1967 school year. Samples of matched pairs of students were then drawn from the OMA and control schools to provide comparison groups. In the first grade, 202 OMA students outperformed 202 matched students from the control schools on Word Knowledge and Reading scores. No significant differences were found, however, in comparisons made between second and third OMA students and their matched controls on any of the obtained measures.

C. Grade Reorganization Project: Scores of sixth graders in reading comprehension on the city-wide Metropolitan Reading Test administered in October 1966 were compared with their scores on another form of the same test administered six months later. Mean gain scores for some 2000 program children were compared against gain scores for an approximately equal number of children from similar type schools (intermediate schools -- encompassing grades 6, 7, and 8) which were matched to the program schools in terms of ethnic composition and socioeconomic level and against scores of approximately 800 sixth graders from matched regular elementary schools. There were no significant differences. The three groups gained 4, 4, and 5 months respectively during the period in which a six month gain is the norm.

Analysis of Program Components

A. General

The "treatments" provided by More Effective Schools and Operation Moving Ahead were quite similar in that their main emphasis was that of providing additional instructional personnel to work with the normal classroom teachers. In the MES program, these special services were provided to all children in the classes through a process of grouping students for purposes of small group and individualized instruction. OMA, on the other hand, provided teacher aides (approximately one for every two classrooms) who worked with groups of 6 to 8 children at a time for 20 to 30 minute periods. Students served were primarily those designated by their regular teachers as requiring additional help. The Grade Reorganization Project "treatment" was quite different. It consisted, essentially, of reorganizing traditional junior high schools by removing the ninth grade and adding the sixth grade. Benefits were expected to accrue primarily from the sharing of learning experiences and life values with children of more varied ethnic, national, and socioeconomic backgrounds than are found in the typical elementary school and from an improved sixth grade curriculum. The three programs also differed in the age/grade level of the students served. The Grade Reorganization Project was confined to the sixth grade. Operation Moving Ahead served the first, second, and third grades, while More Effective Schools encompassed prekindergarten through sixth grade (although the evaluation was restricted to grades 2 through 6).

B. Personnel

The three programs were similar in that all employed qualified teachers as instructors and all provided the services of qualified school psychologists. Each program also provided its own special personnel features. These special features are described separately for each program.

More Effective Schools

The MES program differed from the other two by virtue of the fact that it made use of both qualified community workers and volunteer community workers without special qualifications. Parents of the students were also more heavily involved in this program than in either of its counterparts. Finally, it had the lowest pupil-teacher ratio for regular classes. (OMA had smaller special help groups, but only for brief periods during the day.)

Operation Moving Ahead

The OMA program had no unique personnel features but shared with the MES program the following features which were not employed by the Grade Reorganization Project: (1) qualified skill specialists, (2) adult classroom aides, (3) qualified social workers, and (4) qualified medical-dental-nursing personnel.

Grade Reorganization Project

The Grade Reorganization Project was unique in making no attempt to obtain parental involvement. It also had the highest pupil-teacher ratio of the three programs. In addition, it shared with MES the following personnel features: (1) qualified counselors, (2) qualified reading specialists, (3) librarians, and (4) audio-visual instructors.

C. Methods

There were no methodological components which were common to all three of the programs. The components which were provided by each program are discussed below.

More Effective Schools

This program was unique in that classes were heterogeneous with respect to abilities and interests but provisions were made for grouping students according to interests and/or abilities within the class structure. It was also alone among the three programs in providing remedial arithmetic instruction. Both the MES and the OMA programs provided remedial reading and language instruction, field trips, and visits to parents' homes by social workers.

Operation Moving Ahead

The OMA program was unique in employing dramatization as an instructional technique. In addition, it shared the above listed methodological features with the MES program.

Grade Reorganization Project

Perhaps the basic methodological feature of the Grade Reorganization Project (at least as applied to the 6th grade) was the hetereogeneity of students with respect to ethnic, national, and socioeconomic background. Homogeneous grouping according to ability level was prevalent, however, in mathematics and language arts classes.

D. Services

All three of the programs provided health services to the students. All three also incorporated teacher training programs. Each program also had its own special service features. These special features are described below separately for each program.

More Effective Schools

The MES program was unique in that it incorporated meetings of parents as an integral part of its "treatment". In addition, the following service components were provided by the MES program and by the Grade Reorganization Project: (1) an extended school day, (2) a library, (3) counseling sessions, (4) team teaching (although attempts to employ team teaching in the Grade Reorganization Project were not entirely successful), and (5) regular staff meetings to discuss progress.

Operation Moving Ahead

Of the three programs, OMA alone provided for in-service training of aides as well as teachers. It was also the only program to provide a cultural program for program participants.

Grade Reorganization Project

The Grade Reorganization Project had no unique service components. It shared five special service components (listed above) with the MES program.

E. Equipment

Both the MES and OMA programs employed audio-visual instructional aids. Special language kits were also employed by the OMA program. The Grade Reorganization Project was the only one of the three which made use of foreign language books and provided typewriters for typing instruction.

Tentative Conclusions

The three programs discussed above were quite similar with respect to their stated objectives. Except for the fact that the OMA program was concerned with somewhat younger children than the other two programs, they were also similar in terms of the populations served. On the other hand, treatment differences between the Grade Reorganization Project and the other two programs were very large; so large, in fact, that the authors are inclined to question the realism of the Grade Reorganization Project's stated objectives and the means employed to evaluate the program. There appears to be little likelihood of producing gains in reading skills simply by reorganizing the sixth grade into a junior high school type of environment.

The MES and OMA programs were similar in terms of their treatments as well as their objectives. They were also similar in terms of the degree of success they achieved. Although the MES program has been considered successful, the achieved gains were far from impressive. They depended, in fact, on the removal of student mobility factors from the evaluation data for their very existence. It is possible that a similar treatment of the OMA evaluation data might have had a similar effect.

Some confidence may be placed in the conclusion that the Grade Reorganization Project's treatment does not represent an effective method for producing gains in reading skills. Inferences drawn from comparisons of the MES and OMA programs can only be highly speculative and of little value. If one is willing to accept as fact the apparently higher degree of success achieved by the MES program, then the difference is most probably due to the intensity of the "treatment" rather than to qualitative differences between it and the OMA program. Parental involvement was greater, the pupil-teacher ratio was lower, and more services were provided.

Comparison 10

The Programs

A. Successful: Project Concern, Hartford, Connecticut.

B. Unsuccessful: Integration Model Project, Oakland, California.
Free Choice Open Enrollment Program, New York City.

Their Objectives

A. Project Concern: To assess the range of academic growth that takes place when the typical disadvantaged child of the city is placed in suburban schools where expectations of learning are high. To demonstrate the operational feasibility of urban-suburban collaboration in such a program. To assess the effects of "supportive services" provided by teams of one qualified teacher and one mother to groups of bussed children.

B. Integration Model Project: To provide bus transportation for students from over-crowded schools to attend under-capacity schools. To stimulate educational achievement of project pupils, and to retain or increase learning rate of receiving students. To provide cultural enrichment-exchange activities to be shared by sending and receiving schools. To stimulate social-motivational development of students and enlarge understanding of school personnel.

C. Free Choice Open Enrollment: To permit students to benefit from the presumed advantages of integrated educational experience through a program of bussing.

Students Served

A. Project Concern: The experimental sample was composed of intact classes selected randomly from schools in the target area which had at least 85% non-white enrollment. Two hundred fifty-five inner city students from grades K through 5 were involved. In the group 88% were Negro, 9% Puerto Rican, and 3% white. The children were distributed to 123 classes in 33 schools on a "vacant seat basis".

B. Integration Model Project: The program was designed to accommodate 360 students, however, only 168 students in grades 1-6 chose to participate. The program was open to all children in the sending school area, and students had the opportunity of choosing which "receiving" school they wished to attend. There were three "sending" schools and seven "receiving" schools. All program students were Negro.

C. Free Choice Open Enrollment: The study was conducted in 38 receiving schools and included all receiving schools which enrolled at least 30 OE (Open Enrollment) children. Also included were 25 sending schools, however, only three parts of the study conducted in the receiving schools were duplicated in the sending schools. The current evaluation involved 41 schools: 133 classes in 15 sending schools (11 elementary and 4 junior high) and 234 classes in 26 receiving schools (22 elementary an 4 junior high). Pupils involved in the program were those living in economically disadvantaged areas who were attending schools with a heavy concentration of minority groups. They were primarily Negro and Puerto Rican.

Assessment of Cognitive Achievement Benefits

A. Project Concern: I.Q. changes as measured on the WISC revealed the following statistically significant improvement: (1) Placement in a suburban school with supportive assistance resulted in a change of 9.3 points at kindergarten, 6.7 points at grade 2, and 6.2 points at grade 3. (2) Placement in a suburban school without supportive assistance showed a growth of 8.2 points at kindergarten, 5.0 points at grade 1, and 6.4 points at grade 3. (3) There was no evidence that suburban placement resulted in improved performance in grades 4 and 5. The Test of Primary Mental Abilities was administered with the following statistically significant ($p < .05$) results: (1) In 7 of 8 reported cases in grades K through 3, program students performed better on the Verbal subtest than students in the control group in the urban school. (2) In 2 of 3 cases in grades 2 and 3, program students did better on the Reasoning subtest than the controls. Major impact appears to be in the verbal area with secondary effect on the reasoning test. Again no significant differences were obtained in grades 4 or 5.

B. Integration Model Project: Three study groups were used at grades 2-6. They were (1) Integration Model participants, (2) Receiving school matches, and (3) Sending school matches; matches were based on sex, age, grade level, and pretest reading comprehension scores. Appropriate standardized reading and I.Q. tests were administered to students in the three groups as pretests in either May or October of 1966 and again as posttests in May 1967. When the three groups were compared in terms of pre- to posttest gains, no significant differences were found on any of the measures employed at any grade level.

C. Free Choice Open Enrollment Program: In 1965-66 an evaluation of achievement in reading was made. Two hundred and twelve OE children were matched in terms of age, sex, and reading level with students who remained in the sending schools. Reading achievement gains over the school year were assessed using the Metropolitan Reading Test. No differences were found between the two groups. In 1966-67, data analysis was expanded, and gave these results: 5th grade students in sending schools had a median reading level of 4.4; students in the OE program - 4.7; and those in the receiving schools - 6.0. For sixth grade students, students in the sending schools had a median achievement level of 4.9, students in the OE program - 6.0, and students in receiving schools - 7.6. Although OE students were reading below expectation, they were .3 above the average fifth grader in the sending schools, and 1.1 years above the average sixth grader; however, these scores are still markedly below the national norms, the fifth graders being one year behind and the sixth graders .7 year behind. About 25% of fifth and 39% of sixth graders were working at or above grade level. The number of years spent in the program did not have any consistent long-range effect on reading level. Among sixth graders, of those who had completed two years in the program, 35% were reading at or above grade level. This rose to 45% after three years, but rose no higher, falling to 43% after four years and 42% after five or six years. A similar pattern was found in fifth grade, with 21% of those who had completed two years of the program reading at grade level, but only 27% for those who had completed three, four, or five years.

Analysis of Program Components

A. General

All three of the programs discussed above were essentially "bussing" programs. Project Concern, however, differed from the other two in at least two major respects. First, it was set up as a research program with experimental and control groups rather carefully selected. Second, the program provided supportive services which accompanied pupils to the suburban schools. These supportive services were provided by teams consisting of one qualified teacher and one volunteer mother from the target area. The nature of the supportive services differed somewhat from school to school. Although it was the program's intent that the services should be primarily oriented toward the program children, the exact manner in which the teacher-mother teams were used was a matter left to the discretion of the receiving schools.

B. Personnel

All three programs used qualified teachers as instructors, and all three involved the program children's parents to some degree. Project Concern was unique in that it involved parents as classroom aides. Although as mentioned above, the exact role these volunteer parents played varied from school to school. The role of the parents in the other two programs did not include any participation of an instructional nature. The Free Choice Open Enrollment Program was unique in that it did not make use of qualified community workers, as both of the other programs did. The Integration Model Project was unique in providing three remedial teachers to provide assistance in reading and other basic skill areas to students needing this service in the seven "receiving" schools.

C. Methods

The major methodological feature of all three of these programs was that of bussing to provide participating students with an educational environment physically less crowded, and presumably, with higher academic standards. Project Concern was unique among the three programs in that it provided home visits by a social worker. The Integration Model Project, on the other hand, was the only one of the three which involved field trips.

D. Services

All three of the programs were of at least two years' duration (although the evaluation periods were shorter). Of the three programs, Project

Concern and Free Choice Open Enrollment provided lunches, while the Integration Model Project did not. Project Concern and the Integration Model Project both provided in-service training for teachers, regular staff meetings to discuss program progress, and the services of a supporting staff not directly involved in the academic objectives of the program. All three projects involved meetings of the students' parents, but the Integration Model Project was unique in incorporating regular parent-teacher conferences. This latter project was also unique in including a cultural program.

Tentative Conclusions

The potential of a bussing program to produce cognitive achievement benefits for participating students is entirely dependent upon the academic characteristics of the receiving schools. The receiving school environment must be superior to that of the sending school in order for there to be any hope for success. While characteristics of this nature are extremely difficult to assess, the fact that the receiving school control group did not significantly outperform the sending school control group in the Integration Model Project is at least suggestive of the fact that this prerequisite condition may not have been met. The same possibility exists with the Free Choice Open Enrollment Program, although there is less supportive evidence for it. It appears quite likely, then, that the success of Project Concern may be attributable to a real superiority of the receiving schools over the sending schools -- a condition which may not have existed in the case of the other two programs. Aside from this consideration, the greater treatment "intensity" is another likely cause for the success of Project Concern. The involvement of parents in the classroom may have had a significant motivational effect on the students as could the presence of teachers from the target area schools. If one were to accept this premise, it would be expected that the effects would be greater for the younger children than for the older children. The evaluation data support this hypothesis. Any bussing program is likely to have some negative effects due to placing children in a new and unfamiliar environment. To be successful, then, the gains derived from such programs must outweigh these potential negative effects. If the goals of such programs are primarily those of cognitive achievement gains, the receiving schools must be carefully chosen in terms of their academic standards.

Comparison 11

The Programs

A. Successful: Elementary Reading Centers, Milwaukee, Wisconsin.

B. Unsuccessful: Remedial Teacher Project, Milwaukee, Wisconsin.

Their Objectives

A. Elementary Reading Centers: To extend and expand reading center services for public and non-public school students in grades four through eight who are at least one year retarded in reading achievement relative to their mental capacity.

B. Remedial Teachers Project: To raise the level of performance of disadvantaged children in the upper primary grades in reading, writing, language, and arithmetic through special remedial instruction.

Students Served

A. Elementary Reading Centers: Over 1000 students were served during the 1966-67 school year. Some participated for the first semester, some for the second semester, and some for both semesters. Evaluation data were available for more than 400 students each semester. The participating schools were all in central city poverty areas. Priority was given to students with average or above average I.Q. who were a year or more retarded in reading. Both Negro and white students participated.

B. Remedial Teachers Project: A total of 990 students were served during the 1966-67 school year. They were drawn from 24 schools located in areas of economic deprivation. Students were selected by their classroom teachers, by the special remedial teacher, and by the school principal from grades four through eight if their achievement was not commensurate with their ability.

Assessment of Cognitive Achievement Benefits

A. Elementary Reading Centers: Gains in reading achievement for a random sample of program participants were assessed by means of pre- and post-treatment testing. The mean gain in silent reading for 316 students during the first semester of the program as measured by the California Reading Test was 0.64 years. This gain exceeds both the national norm expectation of 0.5 years and the expectation for disadvantaged students of 0.35 years. The oral reading gain for the 318 tested students was 0.69 years as measured by the Wide Range Test. During the second semester about half of the students carried over from the first semester while the rest were new. On the basis of national norms a gain of 0.74 years was therefore expected while a gain of 0.50 years was expected for disadvantaged students. The achieved gains were 0.76 in silent reading (529 pupils) and 0.89 years in oral reading (481 pupils).

B. Remedial Teachers Project: Student achievement gains were measured each semester with the Word Knowledge and Word Discrimination tests of the Metropolitan Achievement Test Primary II Battery using a pre- and post-test design. During the first semester there were no consistent findings. One of two treatment groups was significantly better than the control group (composed of students on the waiting list for the program) on the Word Discrimination test, but the control group out performed the same treatment group on the Word Knowledge test. During the second semester, no significant differences among groups were found.

Analysis of Program Components

A. General

These two programs had many features in common. Both dealt with small groups (6 to 8 for the Elementary Reading Centers, and 1 to 5 for the Remedial Teachers Project) which were presumably homogeneous. Students in both projects were helped for approximately 30 minutes a day, 5 days per week. Both programs were primarily concerned with language skills (although about 7% of the time in the Remedial Teachers Project was devoted to arithmetic). The programs also had several significant differences. The age of the students served was quite different -- the Elementary Reading Centers program served much younger children. Approximately two-thirds of the Elementary Reading Center program's teachers were specially qualified for remedial instruction while the teachers in the Remedial Teachers Project were qualified only to the extent of having a minimum of one year's regular teaching experience. Finally, students in the Elementary Reading Centers program were selected who had average or above average intelligence while "needing help" was the primary selection criterion for the Remedial Teachers Project.

B. Personnel

The main personnel differences between the two programs related to the qualifications of the teachers and was discussed above. The Remedial Teachers Project also differed from the other in that it made use of qualified student counselors. It also had a somewhat more favorable pupil-teacher ratio than the Elementary Reading Centers program.

C. Methods

The two programs shared the main methodological feature of remedial reading instruction. The Remedial Teachers Project also provided remedial language and arithmetic instruction. This project also appeared to place a greater emphasis on child-centered as opposed to strictly academic goals than did the Elementary Reading Centers program.

D. Services

The Remedial Teachers Project differed from the other program by providing student counseling sessions and by making provision for regular staff meetings to discuss progress. The Elementary Reading Centers program, on the other hand, incorporated in-service teacher training.

E. Equipment

The Remedial Teachers Project made use of special language "kits" and audio-visual materials. The Elementary Reading Centers program did not incorporate these features.

Tentative Conclusions

It is quite difficult, on the basis of the similarities and differences of these two programs, even to speculate as to why one was successful and the other was not. There are some interesting general conclusions which can be drawn from the comparison, however. It is possible, even when working with quite young children, to achieve success in groups as large as six to eight. It is also possible to achieve success by working with these children only half an hour per day. Finally, it is possible to achieve success without student counseling, without parental involvement, without extensive special equipment, and without such special services as field trips and social and cultural activities. While there is no intent here to label these features as having no value, it does appear that they are not essential to the achievement of cognitive benefits.

Since the Elementary Reading Centers program lacked so many features common to other programs, to what can its success be attributed? Two features stand out. The first, rather specifically stated academic objectives, is a feature common to many of the successful programs. The second likely candidate is the use made of specially qualified teachers. This feature relates directly to the "intensity" or relevancy of the treatment. Again, intensity has been a feature of the treatments of many successful programs.

Comparison 12

The Programs

A. Successful: School and Home: Focus on Achievement, Flint, Michigan.

B. Unsuccessful: Linguistic Approach to Reading, Madison, Wisconsin.

Their Objectives

A. School and Home: To raise the academic level of under-achieving elementary school children by involving parents in the daily reading exercises and study habits of their children.

B. Linguistic Approach to Reading: To raise the reading level by establishing whether a linguistic approach to reading would be more effective for culturally disadvantaged children than a basal reading series.

Students Served

A. School and Home: (Results available only for 1961-62 school year.) The program involved two elementary public schools during 1961-62 and encompassed approximately 1,100 children in grades K through 6. In 1963 the program was expanded to include 2,300 children. Children involved were Negroes primarily from low income families.

B. Linguistic Approach to Reading: Forty students who scored in the lower third on a reading readiness test were chosen to be included in this program. They were stratified by sex, and 10 of each sex were randomly assigned to the experimental or control group. The mean age was 6.8 and the mean I.Q. as measured by the Ammons Quick Test was 80. The treatments were administered in two half-hour periods daily for four days and for one half-hour period on Friday throughout the entire school year.

Assessment of Cognitive Achievement Benefits

A. School and Home: Students were administered alternate forms of the Gates Revised Reading Tests as a pre- and posttest. Children in the two experimental schools showed overall gains of 5.4 months in reading during the five month period between pre- and posttests, while children in the control school showed gains of 2.7 months during the same period. The following statistically significant gains were reported for second grade children in one of the two experimental schools: vocabulary, 0.8 years, comprehension, 2.1 years. The other experimental school showed significant gains in vocabulary of 0.5 years. Fifth grade students at the first experimental school showed statistically significant gains in vocabulary of 1.4 years, and those at the second experimental school showed gains of 1.1 years in vocabulary and .7 years in comprehension.

B. Linguistic Approach to Reading: Four subtests (word reading, paragraph meaning, vocabulary, word study skills) of the Stanford Achievement Tests were administered upon completion of the treatment. While no significant differences were revealed between treatments, there was a sex effect significant at the .05 level, the scores for girls being greater than for boys. A significant sex by treatment interaction was also found with male students profiting more from the basal reading (control) treatment and females progressing more rapidly under the linguistic approach.

Analysis of Program Components

A. General

The Linguistic Approach to Reading program was of an exploratory, experimental nature. It was designed to test an hypothesis regarding the relative effectiveness of two different methods for teaching reading to disadvantaged children. The School and Home program, on the other hand, was clearly designed as an attempt to help disadvantaged children develop their reading skills. The main methodological tool employed by the School and Home program was that of parental involvement. A quite demanding schedule of activities was set up for the mothers of the program children. These activities involved not only reading to their children, and listening to their children read, but included such things as providing for quiet study periods, reinforcing and encouraging their children, providing the tools necessary for doing good work, getting children to bed at regular times each night, getting the children up in time for breakfast, etc. Apparently the program was quite successful in getting the mothers to perform these desired activities. The parents of the children in the Linguistic Approach to Reading program were also involved, but not as a part of the program "treatment". Parental involvement was on a school-wide basis, and thus must be considered equal for the experimental and control groups.

B. Personnel

Both programs employed qualified teachers as instructors and both had some degree of parental involvement (see section A above). The Linguistic Approach to Reading program also employed qualified reading specialists while the School and Home program did not. As mentioned above, the School and Home program relied heavily on parental involvement as a major program component.

C. Methods

As mentioned earlier, the major methodological component of the School and Home program was use of the parents (primarily the mothers) as tutors and encouragers of their children. Incentives to read were also provided in the form of a "bookworm" club. Classroom charts were provided on which the number of books read was tallied and special rewards in the form of lapel buttons and diplomas were given for reading accomplishments. The Linguistic Approach to Reading program was concerned exclusively with two different methods of reading instruction. Except for this difference, children in the experimental and control groups were treated identically. Both groups, for example, had remedial arithmetic instruction, special language instruction, both were exposed to programmed instructional materials, and both made field trips.

D. Services

Both of the programs involved regular staff meetings to discuss progress, both involved meetings with parents, and both were of a two semester duration. These services, however, were administered to both the experimental and the control group in the Linguistic Approach to Reading program, while they were part of the treatment in the School and Home program. The School and Home program in addition involved a number of parent-teacher conferences.

E. Equipment

The School and Home program provided all program children with personal dictionaries, with individual file boxes, and with books and materials to be taken home. The Linguistic Approach to Reading program involved none of these components, but did make use of games and toys, of language masters, and of audio-visual devices. Again, however, all of these equipment components were available to both the experimental and control groups.

Tentative Conclusions

The most obvious difference between the School and Home program and the Linguistic Approach to Reading program is that the former had a strong motivational orientation, while the latter was concerned exclusively with instructional methods. The School and Home program was based on the philosophy that children could be brought to internalize the values of "significant others". The treatment was directed at the children through the parents by attempting to develop in the parents a realization of the importance of reading skills and the things they could do not only to pass these values on to their children but to help them develop their skills as well. Finally, this program incorporated a system of rewards for accomplishment. Whether the success of this program was due to parental influences on the motivation of the children or to the specific steps parents took to assist their children cannot be determined from the data. It seems unlikely to the authors, however, that the motivational components of this program were not at least partially responsible for its success, This conclusion is supported by another, although less well designed study, conducted on third grade children in the Stephen Boles School in Racine, Wisconson.[1] This program entitled, "The effects of motivational procedures on children's reading" did not involve parents, but did employ a system of concrete rewards for reading achievements. It also employed volunteer aides who visited each classroom and discussed with each child the books he had read and listened to him read. During the two month duration of the program, children made gains of four months in vocabulary and three months in comprehension as assessed by the Gates-MacGinitie Reading Tests. In this case, as with the School and Home program, the treatment was largely of a motivational nature, but produced significant achievement gains.

---

[1] Klausmeier, A., Quilling, Mary, & Wardrop, J. L. (Eds.) Research and development activities in R and I units of five elementary schools of Racine, Wisconsin, 1966-1967. Technical Report No. 52. Center for Cognitive Learning, University of Wisconsin, Madison.

It can be concluded from the Linguistic Approach to Reading program that disadvantaged children as a class profit equally well from the standard basal reading approach and the linguistic approach. The interesting sex-by-method interaction reported in this study should not be ignored, however. This type of interaction is being reported with increasing frequency and may well lead eventually to the adoption of different teaching strategies for the two sexes.

Comparison 13

The Programs

A. Successful: The Programmed Tutorial Reading Project of Indianapolis, Indiana.

B. Unsuccessful: Programmed Instruction Project, Chapel Hill, North Carolina.

Language Arts Project, Washington, D. C.

Their Objectives

A. Programmed Reading: To improve the reading of pupils retarded in that area.

B. Programmed Instruction: To improve the mental abilities (such as verbal, numerical, spatial and reasoning abilities) of deprived children.

C. Language Arts: To develop language skills and comprehension.

Students Served

A. Programmed Reading: The children were from deteriorated city-center areas. Of 1,200 first-graders receiving instruction in 1967-68, approximately 700 were Negro and 500 Caucasian, many of the latter being of Appalachian origin.

B. Programmed Instruction: Some 300 kindergarten children, both Negro and Southern rural white, were in the program.

C. Language Arts: In 1967-68 over 11,000 pupils, mostly Negroes from depressed areas of central Washington, D.C., were in the program. They were drawn from kindergarten and the first three grades.

Assessment of Cognitive Achievement Benefits

A. Programmed Reading: The Ginn Recall Test, the Ginn Pre-primer (A) and the Ginn Primer (B) Tests were the tests used to assess the effectiveness of this program. The experimentals in 1965-66, who received two tutoring sessions a day, were significantly superior on these tests compared with the control pupils,

B. Programmed Instruction: The Primary Mental Abilities Test and the Stanford-Binet were used to assess changes in mental ability. No consistent pattern was revealed, the experimentals gaining higher scores in some instances but lower scores than the controls in others. Later academic performance on the Stanford Achievement Test was shown to be no better for experimentals than for controls.

C. Language Arts: The results of testing with the Metropolitan Reading Readiness Test and the Stanford Achievement Tests in 1965 showed no significant superiority in reading for 263 pupils who had been in the program for three years compared with controls.

Analysis of Program Components

A. General

The three programs are not very well matched. While it is true that the Programmed Reading and Programmed Instruction projects both employed programming, the way in which instruction was offered differed radically (see Methods). The objectives of the Programmed Instruction program were broader than those for the other two, but included skills associated with reading, the prime target for them. The populations served were similar in socioeconomic background and ethnicity. The Language Arts project was considerably larger than the other two, but the sample tested was about the same in all three. The tests employed were not strictly comparable, since no reading test was used in the Programmed Instruction project itself. Verbal factors feature prominently in both the Primary Mental Abilities Test and the Stanford-Binet, however, and the follow-up using the Stanford Achievement Test confirmed the pattern of no significant benefits.

B. Personnel

The Programmed Reading project did not use qualified teachers, and the reports emphasize that para-professional personnel can do the tutoring job if it is properly programmed. The other two projects used qualified teachers, although tutors were also available in the Language Arts Project. Naturally, the greatest difference between the programs was that in the Programmed Reading project a 1:1 relationship existed between tutor and tutee twice a day, while classes of conventional size were the usual basis for the other two. Parental involvement was quite deliberate in the Language Arts project, scarcely existed in the Programmed Instruction project, and was used sparingly in the successful Programmed Reading project.

C. Methods

The Programmed Reading project concentrated much more specifically on reading than did the other two. The Programmed Instruction project attempted to build up a number of intellectual skills, including spatial perception and inductive and deductive reasoning. The Language Arts project included instruction in most areas of language arts, such as speech and verbal fluency, as well as in reading.

The Programmed Reading project employed programmed tutoring as a supplement to the regular reading instruction, the pupils working individually with the para-professional but tightly programmed tutor for two fifteen-minute periods a day. The same tutor worked with any one child all year. The child worked at his own level and rate. The Programmed Instruction Project chiefly used a teaching machine to present programmed material to supplement the regular kindergarten instruction, under the direct supervision of an experimenter. An elaborate system of reinforcements was devised. The Language Arts program offered a broader, more loosely organized kind of assistance, which included enrichment items such as field trips and dramatizations. Special language teachers also worked with the regular classroom teachers to build a wide variety of pupil activities to enhance the development of language skills.

D. Services

Some in-service training was provided for the teachers in the Language Arts program, but not for those in the Programmed Instruction project. The tutors in the Programmed Reading project can be said to have received much in-service training in the sense that they were shown how to follow very closely the program of studies for each pupil, and how to engage in a cyclical tutoring relationship with their tutees. Considerable training was provided both before and during the tutoring.

The Language Arts project arranged meetings with parents and ancillary excursions involving parents, while the others did not.

All these programs have operated for three years or more.

E. Equipment

The Language Arts project had games, toys, listening posts, Language Masters, books and materials to take home, and audio-visual aids, all in some profusion. The chief equipment for the Programmed Reading project was the Ginn Basal Readers, with little else besides the tutoring materials that were developed. The Programmed Instruction project had its typewriters and teaching machines, together with "reward-machines" that yielded trinkets as reinforcements for good performance.

Tentative Conclusions

In the cognitive domain, only the Programmed Reading project was successful. The tests used to measure cognitive achievement in the Programmed Instruction project may not have been sufficiently sensitive or appropriate, but no general success could be reported. The Language Arts program likewise could not show success on the basis of the tests employed.

As discussed under General, the matching is not very good in this comparison. The programs are comparable, however, in that they all declared their objectives to be mainly cognitive and in the area of language.

The success of the Programmed Reading project when compared with the other two appears to be due mainly to:

a) a tightly structured programmed approach, the use of which was closely supervised;

b) an individualized one-to-one tutorial relationship for up to half an hour each day;

c) limited objectives directly served by the program.

By contrast, the other two programs had more diffuse objectives, served by a wide variety of approaches in differing degrees, and they lacked both the tight control of the Programmed Reading project and its individualization.

Comparison 14

The Programs

A. Successful: Speech and Language Development Program, Milwaukee, Wisconsin.

B. Unsuccessful: Auditory and Perceptual Skills Training Program, New York City.
Language Arts Project, Washington, D. C.

Their Objectives

A. Speech and Language Development Program: To improve the verbal communication skills of disadvantaged children through small group speech therapy instruction.

B. Auditory and Perceptual Skills Training Program: To determine whether a developmental auditory training program for disadvantaged young retarded readers would facilitate reading retraining with a resultant gain in reading achievement both immediately after the training program and after a year's time.

C. Language Arts Project: To develop language skills and comprehension.

Students Served

A. Speech and Language Development Program: Some 273 students were taught in the program during the 1966-67 school year. Students were drawn from 17 classes (grades 1 and 2) from poverty area schools. Nearly all students in these classes needed help, but only those in the bottom 85% as judged by teachers, measured by a speech articulation test, and evaluated by speech therapists were eligible. Ethnic composition was approximately 70% Negro and 15% Spanish-American. Mean I.Q. was 84.

B. Auditory and Perceptual Skills Training Program: Sixty-four students were initially selected but complete data were obtained on only 45 for a variety of reasons. Children were drawn from the third grade in five schools located in low socioeconomic neighborhoods. All scored at grade level 2.4 or below on the Gates Primary Reading Test. No children were included with I.Q.'s below 80, who represented severe behavioral problems, who were non-English speaking, or who had any of a variety of physical problems such as auditory or visual impairment. All program children were either Negro or Puerto Rican.

C. Language Arts Project: In 1967-68 over 11,000 pupils, mostly Negro from depressed areas of central Washington, D.C., were in the program. They were drawn from kindergarten and grades one through three.

Assessment of Cognitive Achievement Benefits

A. Speech and Language Development Program: Four groups of students were involved in this study -- two experimental and two control. They were roughly matched on age and grade level, on I.Q. (based on the Pintner-Cunningham Intelligence Test), and on socioeconomic background. The first experimental group received its treatment during the first semester of the school year and received no treatment during the second semester. The second experimental group received its treatment during the second semester, and did not receive any treatment the first semester. The Ammons Quick Test of Verbal-Perceptual Intelligence, a short version of the Ammons Full Range Picture Vocabulary Test was administered to all four groups in January and in May of 1967. On the January testing, the first experimental group which had received treatment performed significantly better ($p<.05$) than did any of the other three groups which had not received treatment. On the May Ammons testing, the second experimental group did not show a significant gain over its control. The first experimental group, however, maintained its superiority over the three other groups, although it had not received further treatment beyond January. The evaluators explain this result by saying that the first experimental group experienced gains of accumulative nature, continuing to maintain the gain made during the first treatment period. Therapists not connected with the program were asked to rate tape recordings or randomly selected samples drawn from the experimental groups before and after treatment. The tape recordings were each of three minutes duration and were rated on seven characteristics. The ratings showed highly significant improvement ($p<.01$) for both experimental sub-samples. No ratings were made of sub-samples drawn from the control groups.

B. Auditory and Perceptual Skills Training Program: Three treatment groups and one control group were involved in this very well designed study. The three treatment groups were 1) reading only, 2) reading auditory (sequential), and 3) reading auditory ("interleaved"). A large number of reading and auditory tests were administered to all children before the treatment began in January, 1965, and after the treatment was completed in May and June, 1965. Analyses of covarience were used to assess differences among the groups in terms of gains between the pre- and post-tests. None of these analyses showed any statistically significant between group differences. It was concluded that none of the various combinations of reading and auditory programs seemed to affect improvement in reading. The analyses did reveal some significant tutor-by-treatment and ethnic group-by-treatment interaction effects for many of the auditory and reading tests. Since pupil characteristics and teacher characteristics were largely unmeasured in the study, these interaction effects could not be meaningfully interpreted.

C. Language Arts Project: The results of testing with the Metropolitan Reading Readiness Test and the Stanford Achievement Tests in 1965 showed no significant superiority in reading for 263 pupils who had been in the program for three years as compared with control pupils.

Analysis of Program Components

A. General

These three programs are not particularly well matched. In the first place, the Speech and Language Development Program was primarily concerned with verbal, rather than reading, skills, while the Auditory and Perceptual Skills Training Program was concerned with improving reading achievement. The Speech and Language Development Program dealt with somewhat younger children than the Auditory and Perceptual Skills Training Program, but both of these programs worked with small groups of students whereas the Language Arts Project worked with entire classes. The "treatment" was administered by qualified specialists in the two former programs, but was administered by the standard classroom instructor in the latter program. Finally, the Language Arts Program was evaluated after a three school year treatment whereas the other two programs involved only one semester of treatment.

B. Personnel

The Speech and Language Development Program was unique in that the treatment was entirely administered by qualified speech therapists. These therapists worked with groups of approximately six to eight students at a time. The Auditory and Perceptual Skills Training Program involved a smaller pupil-teacher ratio (one to five), and its treatment was also administered by others than standard classroom instructors. In this case, the instructors were special reading tutors. The main personnel component of the Language Arts Project was a group of special language arts teachers provided at the rate of one per school in the program. These special teachers developed materials and techniques for instruction and worked with the classroom teachers. However, they did not serve as instructors. This program also had the largest pupil-teacher ratio (one to sixteen plus) of any of the three programs. It was unique among the three in terms of involving parents of the students and volunteer workers of the community. Finally, the Auditory and Perceptual Skills Training Program was unique in providing qualified counselors to work with the students.

C. Methods

Some of the major methodological differences among these three programs are described above under "A". As mentioned there, the Speech and Language Development Program was primarily oriented toward verbal language skills. The other two programs were concerned primarily with increasing reading skills, although the Language Arts Project did not provide any specific remedial reading instruction. Both the Speech and Language Development Program and the Auditory and Perceptual Skills Training Program involved both dramatization and field trips as essential program components.

D. Services

Of the three programs, the Speech and Language Development Program was the only one to incorporate in-service training of personnel other than normal classroom teachers. It also made provision for providing normal classroom teachers with special information about the program, a feature which was not shared by the other two programs. The Language Arts Project was unique in that it provided in-service training for teachers, it included regular meetings with parents, it made provisions for excursions other than the regularly scheduled field trips which were conducted by the parents, and it ran for a total of three consecutive years. Both of the other two programs involved only a one-semester treatment.

E. Equipment

Both the Auditory and Perceptual Skills Training Program and the Language Arts Project made use of instructional games and toys. The Language Arts Project also made use of listening posts and provided recorded instructional material. This program, together with the Speech and Language Development Program made use of special reading kits. The Language Arts Project was unique in providing books and materials to be taken home, while the Auditory and Perceptual Skills Training Program was unique in making use of art materials.

Tentative Conclusions

The success of the Speech and Language Development Program was significant but hardly dramatic. Furthermore, the success of this project was found with only one of two experimental groups. The other two programs, on the other hand, produced no measurable benefits. It would appear that the failure of these two programs is due to the general nature of the treatments rather than the specific components they employed. The Language Arts Project constituted an attempt to improve the overall quality of instruction without providing any specific remediation. Program efforts were directed at the teachers rather than at the pupils. While some gains may have been produced by this program, they would be expected to be small and may not have shown up in the evaluation simply for this reason. In the case of the Auditory and Perceptual Skills Training Program it would appear (and the authors of the evaluation report concur in this opinion) that the treatment was simply not appropriate or relevant to the program's goals. Because this program was essentially a well-designed experimental investigation, the fact that no significant reading proficiency gains were produced is in itself a meaningful scientific finding. On that basis, the program can be termed successful. The small, but significant, success of the Speech and Language Development Program can be attributed to its specifically stated goals and to the fact that the treatment was specifically designed to produce achievement of the specified goals. The success in this type of program seems to be directly related to the intensity of the treatment. One would expect that had the program been carried out over a longer time period, or if more hours per week had been devoted to program activities, still greater gains would have been achieved.

Comparison 15

The Programs

A. Successful: Communications Skills Center Project, Detroit, Michigan.

B. Unsuccessful: Special Instructional Programs, Oakland, California.
Individualized Reading Project, Collbran, Colorado.

Their Objectives

A. Communications Skills Center Project: To improve the reading skills of educationally disadvantaged children through special remedial instruction.

B. Special Instructional Programs: To bring normal ability students performing at approximately one year below grade level up to grade level. Major emphasis was placed on instruction in language arts.

C. Individualized Reading Project: To raise the level of achievement of the culturally immature youth from the rural areas. To help pupils become skillful, self-reliant, and independent readers.

Students Served

A. Communications Skills Center Project: There were 2,845 children enrolled in the program in grades 2 through 12. The ethnic composition was 80-85% Negro, 10-15% Caucasian, and 1% or less Spanish-speaking. Evaluation data are available for a sample of only 330 students in grades 4 through 12. Pupils were selected for the program on the basis of referrals obtained from teachers or principals at their schools.

B. Special Instructional Programs: Fifty-two students in the seventh and eighth grade were selected for placement in the program. All students were of average or above-average intelligence but had achievement test performance falling one or more years behind mental and/or chronological ages. All students were Negro.

C. Individualized Reading Program: Program students were in grades 2, 4, and 5 at the Plateau Valley School located in a rural area in Colorado. There were between 35 and 40 students at each grade level. All students were white, and while not economically deprived, were considered educationally disadvantaged.

Assessment of Cognitive Achievement Benefits

A. Communications Skills Center Project: The evaluation of program effectiveness was based on gains from a pre-treatment to a post-treatment test. Pupils in grades 4 to 6 were tested with the Stanford Reading Test Intermediate I Level using the Word Meaning and Paragraph Meaning sub-tests. Junior high school pupils were tested with the Stanford Reading Test Intermediate II Level again using the Word Meaning and Paragraph Meaning sub-tests. Senior high school pupils were tested with the Stanford Reading Test Intermediate II or Advanced Levels. Only the Paragraph Meaning sub-test was employed. Gains made during the program were compared against gains made before entering the program with the evaluators making the assumption that all students were performing at grade level upon entering the first grade. Gains made by 185 program students in grades 4 through 6 were less than pre-program gains for Word Meaning but were greater than pre-program gains for Paragraph Meaning. Gains made by 42 program pupils in grades 7 and 8 were greater during the program than before it on both Word Meaning and Paragraph Meaning. The gains of 113 program senior high school students were three times as great during the program as they were prior to entry to the program. In both junior and senior high school the achieved gains were greater than the national norm, although the statistical significance of these differences was not tested. The gains of program students in grades 4 to 6 were somewhat less than the national norm, although greater than the norm for disadvantaged children.

B. Special Instructional Programs: The Sequential Test of Educational Progress (STEP) and the School and College Ability Test (SCAT) are administered routinely each fall in the Oakland school system. These tests yielded a total of five separate scores which were used to compare the treatment groups with control groups composed of children in the same grades in the same school, but not in the program. No significant differences were found between experimental and control groups in either the seventh or the eighth grade on any of the five measures.

C. Individualized Reading Program: Achievement data based on standardized test results are not available for second grade program students. The SRA Achievement Test and the Iowa Test of Basic Skills were administered to program students in the fourth and fifth grade at the end of the year preceding their entry into the program and at the completion of the school year spent in the program. Measured gains from pre- to post-tests did not exceed expectations based on national norms for either grade level on any of the measures employed.

Analysis of Program Components

A. General

The treatments associated with these three programs were administered in somewhat different ways. Instruction in the Communications Skills Center Project was quite individualized although conducted in special groups of six to ten pupils. Instruction in the Individualized Reading Program was administered to all students in their regular classroom situation, and involved a minimum of individualized attention. The methodology employed by the Special Instructional Programs was somewhere between these two extremes. Selected groups of seventh and eighth graders received all instruction in required academic subjects in "core" classes of somewhat smaller than normal size. The Communications Skills Center Project also differed from the other two programs in that it provided a professional diagnosis of the specific reading problems of each student in the program. This program was also exclusively concerned with reading skills, whereas the other two programs had somewhat broader academic objectives.

B. Personnel

All three programs made use of qualified teachers as instructors. Two of the programs also provided qualified reading specialists while the Individualized Reading Program did not. Other special personnel features of the Communications Skills Center Project included a psychologist who worked with children whose reading problems were judged to be of an emotional nature, and a social worker who assisted the psychologist. As mentioned above, this program also had the most favorable pupil-teacher ratio, while the Special Instructional Programs had a less favorable ratio, and the Individualized Reading Program had the least favorable ratio.

C. Methods

All three programs involved remedial reading instruction. The Special Instructional Programs involved remedial instruction in other subjects as well and also included field trips. Finally, the Individualized Reading Program included attempts to get the parents' help in tutoring and helping the students and involved dramatization.

D. Services

The Communications Skills Center Project was unique among the three programs in providing counseling sessions for the students, in-service training for the teachers, and specially prepared methodological information sent to the teachers. The Special Instructional Programs were unique in making use of team teaching, while the Individualized Reading project was unique in providing a special program library. Both the Communications Skills Center Project and the Special Instructional Programs involved the holding of regular staff meetings to discuss progress, while this feature was not incorporated into the Individualized Reading Program.

E. Equipment

All three of the programs made use of audio-visual equipment. The SRA Language Laboratory materials were used by the two unsuccessful programs, but not by the Communications Skills Center Project. This project, however, was alone in providing the children's parents with written material descriptive of the program. The Individualized Reading project, on the other hand, was unique in providing individual card files for use by the students in recording their reading accomplishments. This program also provided books and materials for the children to take home, as well as art materials to be used in the school.

Tentative Conclusions

While the three programs discussed above are not entirely comparable in terms either of their objectives or of the students served, certain characteristics of the Communications Skills Center Project stand out and are likely to be at least partially responsible for its success. First, the favorable pupil-teacher ratio which this project provided enabled the teachers to provide substantially more individual attention than was possible in the other two programs. Second, since professionally prepared diagnoses of individual student's reading problems were available to the program teachers, instruction could be closely matched to student needs. Finally, the goals of this program were more restricted in scope than those of the other two programs, thus enabling a greater concentration or focusing of instructional efforts. The two unsuccessful programs were significantly less structured and attempted to produce gains across a wider range of academic subjects. These two factors coupled with the lesser extent of individualized instruction probably tended to dilute the intensity of the treatments and thus negatively affect the magnitude of measurable gains.

Comparison 16

The Programs

A. Successful: Junior High Summer Institutes, New York City.

B. Unsuccessful: Junior High School Summer Program, Oakland, California.

Their Objectives

A. Junior High Summer Institutes: To increase the academic achievement of junior high school students who had failed specific school subjects or who were retarded in reading.

B. Junior High School Summer Program: To increase academic achievement levels through special instruction emphasizing reading and language arts.

Students Served

A. Junior High Summer Institutes: The students in the program had just completed the sixth, seventh, or eighth grade and were from intermediate and junior high schools, both public and non-public. They were recommended to the Institutes by their home schools on the basis of their need for remediation or repetition. All were drawn from poverty areas of New York City, such as Harlem and Bedford-Stuyvesant. Many were Negro or Puerto Rican.

B. Junior High School Summer Program: Approximately 600 educationally deprived students from both public and parochial schools. Student selection was handled by the principal of each of the home schools and was dependent upon student and parent requests, counselor recommendations, and evidence of need submitted by teachers and principals. The majority of the students served were Negro.

Assessment of Cognitive Achievement Benefits

A. Junior High Summer Institutes: Pre- and posttest data were collected on students in a sample of six of the Summer Institutes using the Metropolitan Achievement Tests. In reading, the mean gain for 479 pupils was 0.3 years from 5.1 to 5.4 over an instructional period of five weeks. The expected gain during five weeks of the regular school year for disadvantaged pupils would be about 0.1 year, but the instruction would not be as intensive. In mathematics, the mean gain for 339 pupils was 0.5 years from 5.7 to 6.2 over the same instructional period with the same expected gain.

B. Junior High School Summer Program: The Stanford Intermediate Reading Tests (Paragraph and Word Meaning) were used on a pre- and posttest basis to evaluate the progress of sixth grade children. The California Achievement Tests (Reading Vocabulary, Reading Comprehension) Junior High Level were used in a similar fashion to assess the achievement gains of seventh and eighth grade students. The Arithmetic sub-test of the California Achievement Test was used as a pre- and posttest to evaluate the achievement gains of students taking arithmetic instruction. Results of the testing showed that the 124 students in the sixth grade group made no achievement gains during the program. Data on 122 seventh and eighth graders showed some gains in reading comprehension. These gains, however, were offset by equivalent losses in reading vocabulary. Some small gains in arithmetic skills were noted for students at some ability levels. These gains were partially offset by losses at other ability levels, and there was no consistent pattern.

Analysis of Program Components

A. General

These two programs have many common features. One major difference, however, was the fact that the Junior High Summer Institutes program was primarily designed to enable students to make up credit courses which they had failed during the regular school year. The instruction given was largely a repetition of courses administered during the normal school year. Students in the program thus had the rather specific goals of making up for failing grades, and the instruction was specifically tailored to these academic goals. The Junior High School Summer Program, on the other hand, was somewhat less academically oriented. Approximately half of the time was devoted to remedial reading and language instruction, while the other half was devoted to elective subjects in arts and crafts, mathematics, science, and business education. These elective subjects were not directly related to normal school year classes, nor to the student goals of graduation.

B. Personnel

The two programs were similar in that both employed qualified teachers as instructors, both involved the services of qualified counselors, both made use of adult classroom aides, and both involved qualified reading specialists. The Oakland program provided medical, dental, and nursing services, while the New York program involved librarians and at least attempted to involve the parents of the students.

C. Methods

Again, the two programs were similar in many respects. Both involved remedial reading instruction, remedial arithmetic instruction, and field trips. Both programs also provided instruction in other subjects, but the New York program was designed to repeat material the students had failed during the normal school year, while the Oakland program was elective in nature and less directly related to normal school year activities. The Oakland program differed from the New York program in that it also offered remedial instruction in verbal language skills. The New York program, on the other hand, was more highly structured than the Oakland program. Use was made of programmed instructional materials and teaching methods were closely controlled through the use of detailed directives to the program teachers.

D. Services

The services provided by the New York program alone included library facilities, in-service training programs for adult classroom aides, and regular staff meetings to discuss the progress. The Oakland program, on the other hand, provided students with a mid-morning, nutritive snack and included a program of cultural activities. Both programs were of approximately six weeks' duration.

E. Equipment

The New York program made extensive use of the SRA Reading Laboratory materials. It also provided books and other reading materials which students were allowed to take home. Foreign language books were also provided. The Oakland program did not incorporate any of these equipment features.

Tentative Conclusions

These two programs were sufficiently similar so that the success of the New York project can, with a relatively high degree of confidence, be attributed to its academic orientation. It employed rather tightly controlled teaching methods and had the specific goals of getting program students over academic hurdles they had failed to clear during the normal school year. These features of the program almost certainly had a beneficial effect on student motivation as well. Students knew why they were in the program and had specific academic goals which were directly relevant to their eventual graduation from school. Students in the Oakland program knew that they needed help but may not have perceived the relevance of program activities to their particular problems. Use of the SRA Language Laboratory materials may also have contributed somewhat to the success of the New York program. The authors, however, consider this program feature less significant than the academic orientation and motivational aspect discussed above.

Comparison 17

The Programs

A. Successful: Project R-3, San Jose, California.

B. Unsuccessful: Small-Group Basic Education Program (Secondary), Albion, Pennsylvania.

Their Objectives

A. Project R-3: To improve mathematics and reading skills of disadvantaged pupils in junior high school.

B. Small-Group: To improve reading, writing, and computing skills of disadvantaged pupils in high school; to improve self-image and attendance.

Students Served

A. Project R-3: The students selected for the program were mainly Mexican-American, but were from poverty areas and underachieving by between one and two years in reading or mathematics. There were 37 eighth-grade students in the program in 1967-68.

B. Small-Group: In the secondary (high school) portion of this program, which is the only portion considered here, about one hundred students participated, being in grades 7 through 12 and from low-income families, many of them Negro. The students were selected for the program on both the low-income criterion and on low school performance in reading or mathematics. About 30 students were in the eighth grade in the 1965-66 year.

Assessment of Cognitive Achievement Benefits

A. Project R-3: The California Achievement Tests administered at the beginning and again at the end of the 1967-68 school year showed that the R-3 experimentals improved significantly more than their controls, both in reading and arithmetic.

B. Small-Group: At the secondary level, pupils in this program increased their reading age on the Metropolitan Achievement Tests by one month only during the four months between testings. In arithmetic, the average gain was four months in computation, but only two months in problem solving. Individual classes varied a good deal, some classes actually losing ground, but no consistent pattern was evident.

Analysis of Program Components

A. General

The objectives of the two programs were very similar. Although the R-3 program had as its ultimate objectives the improvement of mathematics and reading skills, these were to be achieved partly through improving the self-image of the Mexican-American students. While the populations served by the two programs differed ethnically, they were both drawn from low socioeconomic groups and comprised of underachievers. The tests employed were not identical, but tested the same academic areas and did not favor one program or the other. It should be noted that the R-3 program was designed and executed by a commercial company working in conjunction with the school district; another independent company conducted the evaluation. The Albion program was a Title I (ESEA) program designed and administered by local school personnel. No separate funds were set aside for evaluation, which was undertaken by district personnel.

B. Personnel

A project director (full-time) was in charge of the R-3 program, but the Albion project occupied only half the time of an administrator. Qualified secondary school teachers were employed in both projects, but adult aides were also used in Albion. Albion provided a more comprehensive service for its students, the program paying for community social workers, medical-dental-nursing care, and qualified counselors. Some of these may have been accessible to students in the R-3 program, but were not specially provided. The pupil-teacher ratio in the two programs is a little hard to assess. In both R-3 and the Albion program, small groups were used extensively. In R-3, the project director and all other project personnel became deeply involved, and each morning the pupils were taught in groups of 15 in language and mathematics. In the afternoon they joined the conventional school program. In Albion, small-group instruction occupied at least an hour a day. The groups were taught by specialist teachers in remedial reading and arithmetic. Individual instruction was also used in some cases. The R-3 program stressed parental involvement, and claimed an 85% attendance rate at parents' meetings. Parent volunteers helped in some of the non-academic class activities, particularly those outside the classroom such as camps.

C. Methods

Remedial reading and arithmetic featured prominently in both programs. The teaching plans were much more tightly structured and controlled in R-3 than at Albion, however, with objectives spelled out in detail. The educators and psychologists who planned the R-3 program took considerable trouble to determine the needs of the children academically and to teach to those needs. Concept formation was stressed as well as fact learning. Field trips were used in R-3 but not at Albion. Albion did not offer out-of-school activities, but did stress appreciation of the arts, using individual listening and viewing places in libraries for leisure time enjoyment, and introducing reproductions of sculpture and painting into the language arts program. Social competency was sought at Albion by individual and group counseling, home visitations, and by expanded use of volunteer psychological services. In the R-3 program, the "intensive involvement" camp was a major attempt to improve motivation. Two of the three R's were student Readiness to learn, and learning Reinforcement. These were pursued by gaming and simulation, team learning, leadership instruction, and considerable parental involvement.

D. Services

Library services were available in both programs. R-3 provided the intensive involvement camp. Albion offered counseling sessions. In-service teacher training was provided by both programs, but was considerably better planned and more intensive in R-3, in which the project director and his staff seemed to meet daily. R-3 did not include health care, although this was already available in some measure from the district. Albion offered a fairly full physical fitness program as part of the Small-Group project. Both programs have operated for two complete academic years.

E. Equipment

Audio-visual equipment was used in both programs, but in R-3 its application was planned carefully and special presentations for both pupils and parents were prepared, some for motivational purposes, some for instruction. In R-3, educational games and other instructional materials were designed and produced for the pupils.

Tentative Conclusions

The differences between these two programs are not marked. In view of the methods selected and the staff resources available at Albion, it is perhaps surprising that the program there was not more successful. On the other hand, the operation in San Jose was a far more "directed" effort, involving only one class (in the first year) which received considerable attention from several highly-trained specialists. The care with which objectives were evolved, and instructional strategies developed, must be placed to the credit of R-3. The efforts to involve the parents were greater in R-3 than at Albion, too.

In summary, R-3 succeeded where Albion failed apparently on account of:

a) better planning and direction;

b) better instructional strategies;

c) greater parental involvement.

Comparison 18

The Programs

A. Successful: College Bound (Summer School), New York City.

B. Unsuccessful: College Discovery and Development, New York City.
Higher Horizons (Junior High School segment), New York City.

Their Objectives

A. College Bound: To encourage disadvantaged high school students to work toward college admission and to help them, through special educational programs, to attain this goal.

B. College Discovery and Development: To create a new learning environment for disadvantaged high school students which will enable them to overcome their severe educational and socioeconomic deficiencies so that they may succeed in school and college.

C. Higher Horizons: To bring quality education to disadvantaged children so that they can fulfill their needs and achieve maximum development by providing extra social and educational services and help.

Students Served

A. College Bound: In the 1967 summer session, two thousand students, primarily entering ninth graders from New York City poverty areas, enrolled in the program. Ethnic composition was approximately 50% Negro and 30% Puerto Rican. About one half were between grade level and two years retarded in reading and arithmetic; about one quarter were above this standard and one quarter below.

B. College Discovery and Development: In the first year of the program (CDD-1) 579 entering tenth grade students were served. They were selected from schools serving primarily disadvantaged areas. Ethnic composition was approximately 42% Negro, 23% Puerto Rican, and 35% "other". In the second year (CDD-2) 507 additional entering tenth-grade students were enrolled in the program. The ethnic composition and other characteristics of this group did not differ significantly from the first group. Complex criteria were employed to select students for the CDD program. The average grade point for the selected students was some 10 points below the minimum requirement for college admission -- yet one of the selection criteria was high academic potential.

C. Higher Horizons: Some 58,000 junior high school students were served during a four year period beginning in 1959. Selection was based on school rather than student characteristics. Schools were selected from among those "with the greatest educational needs". Ethnic composition was approximately 65% Negro and 15% Puerto Rican.

Assessment of Cognitive Achievement Benefits

A. College Bound: Students were administered alternate forms of the Stanford Achievement Test at the beginning and end of the six-week summer session. The following statistically significant gains were reported: Paragraph Meaning, 0.3 years; Arithmetic Computation, 1.0 years; Applications, 0.4 years; and Concepts, 0.7 years.

B. College Discovery and Development: Comparisons were made between the CDD students and a control group of college preparatory students. Pre-treatment tests revealed that the control group was superior to the experimental group in Numerical Competence (Stanford Achievement Test) and Numerical Ability (Differential Aptitude Test), but that there were no differences between groups on Reading (Stanford Achievement Test), Verbal Reasoning, or Abstract Reasoning (Differential Aptitude Test). There were also no differences between groups on the Test for Problem Solving. In terms of attained academic averages, there were no significant differences between the CDD-1 group and its control in either the Fall or Spring semesters during the first year of the program. The control group, however, achieved higher scores on the Algebra and Biology Regents Examinations. During their second year in the program, the CDD-1 group were out-performed by their controls on academic average both semesters as well as on the Foreign Language, Science, and Math Regents Examinations. The group which began the program in its second year (CDD-2) was found to differ from its control group only on the DAT Numerical Ability pretest. In this case, however, the control group achieved higher grade point averages than the CDD-2 group both semesters. The control group was also superior on the Foreign Language, Science, and Geometry Regents Examinations although there were no differences on the Algebra Regents Examination.

C. Higher Horizons: I.Q. comparisons were made between a group of 1000 Higher Horizon 8th grade students and a control group matched on the basis of Otis Beta I.Q. tests given two years earlier in the sixth grade. No significant differences were found. Reading Comprehension comparisons were made between a group of Higher Horizon 9th grade students and a control group matched on the basis of a Reading Comprehension test given two years earlier in the 7th grade. No significant differences were found. Eighth grade experimental and control groups were compared on an arithmetic test after having been matched two years earlier in the sixth grade. Again no significant differences were found.

Analysis of Program Components

A. General

The overall objectives of the College Bound and the College Discovery and Development programs were quite similar. The objectives of the Higher Horizons program were less specific in so far as they were not oriented toward college admission. All three programs were similar, however, in their attempts to increase academic achievement in both language and number skills. One perhaps significant difference between the two college programs and the one non-college program was that the former stated and repeatedly reminded the students that the goal was to gain college admission while the latter program did not provide the students with any such tangible goal. Both of these programs had, as additional incentives for the students, arrangements with local colleges and universities whereby at least a substantial proportion of program graduates were guaranteed college admission. The Higher Horizons program also differed from the other two programs in that schools rather than students were selected for program participation and also because somewhat younger students were involved.

Finally, the College Bound program was unique among the three since evaluation data were available only for a six week summer session although the program encompassed entire school years in addition to the summer session.

B. Personnel

The three programs were similar in that all employed qualified teachers as instructors, all provided the services of qualified counselors and all involved the parents of the students. Each program also involved unique personnel features. These unique features are described separately for each program.

College Bound

The College Bound program had the smallest pupil/teacher ratio of the three programs (between 15 and 20 to 1). It also made use of adult community workers in the capacity of liaison between the parents and the program. These community workers were without special qualifications. While libraries and library services were available to the students in the other program, College Bound alone provided a special program librarian. Also, during the summer session, one hour a day was set aside for counseling, individual assistance, or use of the library. Finally, the College Bound librarians instructed students in library use.

College Discovery and Development

The CDD program was unique among the three programs in that it provided, as part of the program, a professionally qualified reading specialist. It was also the only one of the three programs which provided tutors (college students) on essentially a one-to-one basis for all students.

Higher Horizons

Higher Horizons was unique in that it served entire school populations rather than selected students from schools. Additional instructor personnel were provided to program schools but only to the extent of 1.08 percent for the junior high schools. This additional staff reduced class size by an average of 1.33 students.

C. Methods

The three programs were similar in that all three provided remedial instruction in reading, arithmetic, and science (although science instruction was not a part of the College Bound summer program). All three programs also provided field trips -- including trips to cultural events and/or displays. Each program also involved unique methodological approaches. These unique approaches are described separately for each program.

College Bound

The College Bound program provided for homogeneous grouping of students according to ability/achievement levels. Groups were established for each subject taught so that students could be in an advanced group for one subject and a less advanced group for another subject. Flexibility was also provided by enabling students to move forward to more advanced groups or backward at any time when circumstances indicated the appropriateness of this type of move. There is also some indication that the College Bound program may have been somewhat more "hard nosed" in its orientation than the other programs. Academic achievement was the sine qua non of this program and no attempt was made to achieve any non-academic goals. While the other programs were primarily academically oriented they appeared to be concerned with such things as self-realization to a greater extent than College Bound.

College Discovery and Development

The CDD program provided a wider range of academic and cultural activities than either of the other two programs. While these activities varied widely from center to center, they encompassed creative writing activities, round table discussions, and a more extensive variety of field trips.

Higher Horizons

The major distinguishing methodological feature of the Higher Horizons program related to the fact that it was a junior high school rather than a high school program. It encompassed as wide a range of subject matters as the CDD program, thus distinguishing it from the College Bound program, but covered different areas.

D. Services

The three programs were similar in that they all provided student counseling, they all provided some form of financial assistance to students, and they all encompassed cultural as well as academic experiences through field trips or other means. Each program also had one or more unique service features. These unique service features are discussed separately for each program.

College Bound

The College Bound program was unique in providing, as an integral part of the program, the services of a professionally trained librarian. The other unique features of this program were that it did not provide health services (although such services, presumably, were available through the host schools) and that it did not incorporate a program of advisory bulletins to the teachers.

College Discovery and Development

This program differed from the other two in that it provided in-service training for the paraprofessional program participants. It also included meetings of parents -- a feature not employed by the other programs.

Higher Horizons

The distinguishing service features of the Higher Horizons program were both of a negative nature. The program did not provide for regularly scheduled staff meetings to discuss progress nor did it encompass regularly scheduled parent-teacher conferences.

Tentative Conclusions

Before even attempting to identify program components associated with the success or failure of the three compensatory education programs discussed above, it is necessary to examine the basis on which success was defined. The one program which has been considered as successful was of much shorter duration than the two labeled as unsuccessful. Until data are available on longer term effects, it cannot be concluded that the measured benefits will not dissipate or disappear as the "treatment" is extended. Even if the assumption is made that the benefits will continue to stand up, it must be realized that the basis on which they were assessed was different from that employed in evaluating the other two programs. The College Bound assessment was based on the achievement of gains beyond those expected from normative data. No control group was involved in the evaluation. The CDD program, on the other hand, employed a control group which was not really comparable. One might be impressed that the students in this program did as well as they did. Unfortunately, one cannot tell how much better they did than they might have done without the special program.

While admitting that the distinction drawn between the so-called successful program and the so-called unsuccessful programs is tenuous at best, there may still be some merit in attempting to relate program components to this classification. Perhaps the most probable hypothesis in this respect is that the Higher Horizons program was "unsuccessful" because its treatment was simply too dilute. So little in the way of additional resources was provided to the Higher Horizon schools that only small improvements could be expected.

If one attributes the lack of success of the Higher Horizons program to the low level of its treatment, one cannot assume that increasing the amount of the treatment would necessarily produce the desired results. The CDD program involved a far more intense treatment, yet it too was not entirely successful. What then was different about the College Bound program, and why was it successful?

Three hypotheses suggest themselves as possible explanations for the success of the College Bound program. They are listed below in estimated order of likelihood. It must be emphasized, however, that they are only hypotheses suitable for experimental investigation. They cannot be regarded as even probable components of success.

1. The College Bound program had clearly defined academic objectives which were repeatedly impressed on the program students. No activities were undertaken which did not relate directly to these objectives nor were the academic objectives tempered by the inclusion of any "soft" objectives in the program.

2. Students were taught in homogeneous ability groups so that possible negative effects of boredom on the one hand or hopelessness on the other were avoided.
3. Library services were provided along with time and encouragement to make use of them. This program feature may have served to individualize the instruction without sacrificing the specific academic objectives of the program.

Examination of the three hypotheses listed above indicates the possible existence of a common element. Without too great a stretching of the imagination, all three of the listed program characteristics could be assumed to have a positive effect on student motivation. Clearly, the students would know what they were trying to accomplish and what was expected of them. They would be grouped with academic equals and thus could compete on what they would perceive to be an equal footing, and finally, they would have enough freedom of individual intellectual expression to follow their own interests within the overall framework of the specified general objectives.

Clearly, the above paragraph can be regarded as little more than the speculations of the authors. While it does not appear to be an implausible inference, it can certainly not be regarded as a logical deduction from the evidence.

7-25-68

ERIC REPORT RESUME

ERIC ACC. NO.			
CH ACC. NO.	P.A.	PUBL. DATE 6 Dec 68	ISSUE

IS DOCUMENT COPYRIGHTED? YES ☐ NO ☒
ERIC REPRODUCTION RELEASE? YES ☒ NO ☐
LEVEL OF AVAILABILITY I ☐ II ☐ III ☐

AUTHOR
Hawkridge, David G. and others

TITLE
Foundations for success in educating disadvantaged children

SOURCE CODE	INSTITUTION (SOURCE) American Institutes for Research, Palo Alto, California
SP. AG. CODE	SPONSORING AGENCY National Advisory Council on the Education of Disadvantaged Children (contract with U.S. Office of Education)

EDRS PRICE	CONTRACT NO. OEC-0-9-107143-1370 (099)	GRANT NO.

REPORT NO. AIR-805-12/68-FR	BUREAU NO.

AVAILABILITY

JOURNAL CITATION

DESCRIPTIVE NOTE

DESCRIPTORS
academic achievement, achievement gains, cognitive ability, cognitive measurement, compensatory education programs, cultural disadvantagement, culturally disadvantaged, disadvantaged environment, educationally disadvantaged, Mexican-Americans, Negroes, preschool programs, program evaluation, Puerto Ricans, reading instruction, urban education, urban schools.

IDENTIFIERS

ABSTRACT The aim of this study was to identify those characteristics of compensatory education programs most likely to be associated with success and failure respectively in producing measured benefits of cognitive achievement.

Eighteen well-designed, successful programs were compared with 25 matching, unsuccessful programs. The first group was selected in an earlier study, OEC-0-8-089013-3515 (010), from over 1000 surveyed. Unsuccessful programs were selected in this study from the same sample.

Tallies of 91 program components were prepared. Each successful program was then compared with one or two matching unsuccessful programs. The component composition of these programs was analyzed both qualitatively and quantitatively.

Resulting recommendations for establishing sound programs were, for Preschool programs: a) careful planning, including statement of objectives; b) teacher training in the methods of the programs; c) instruction and materials closely relevant to the objectives; Elementary programs: a) academic objectives clearly stated; b) active parental involvement, particularly as motivators; c) individual attention for pupils' learning problems; d) high intensity of treatment; Secondary programs: a) academic objectives clearly stated; b) individualization of instruction; c) directly relevant instruction.